



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

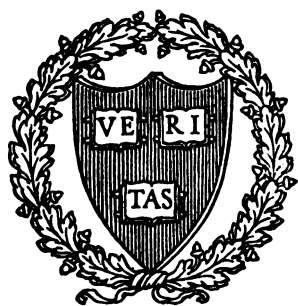
Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

Educ
2814
29.5

375
I64

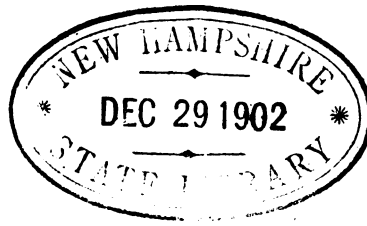


2044 096 986 443



HARVARD
COLLEGE
LIBRARY

108980



Manual for

Iowa Normal Institutes

375
I 64

° INSTITUTE MANUAL

CONTAINING

Course of Study for Teachers,

TOGETHER WITH

WORKING PLANS AND SUGGESTIONS

FOR

IOWA NORMAL INSTITUTES

1900.

DEPARTMENT OF PUBLIC INSTRUCTION

DES MOINES, IOWA

DES MOINES:
F. R. CONAWAY, STATE PRINTER.
1900.

Educ 2814.29.5

RECEIVED
IOWA STATE LIBRARY
NOV 22 1933

✓

INTRODUCTION.

The following pages have been most carefully prepared in response to the request of the Iowa Educational Council. It is a serious attempt to set out a course of study and also a consensus of the best modern plans and methods of conducting a teachers' normal institute. In the preparation of this manual, the editors have called to their aid the expert judgment and experience of a number of educators who have devoted great attention to these special lines, deeming this a more rapid and practical method than to select a single third person, as the committee was originally instructed to do by the council. While it is probable that this contribution to educational work may not reach the standard expected by those who will use it, yet it is sincerely hoped that it will be the means of making many helpful suggestions to institute workers, and, at the same time, may also more nearly unify the work of the state, so that the discussions at teachers' associations and the conferences of institute instructors may be made more comprehensive and decisive. Friendly criticism is invited so that, in the time to come, a more valuable and practical institute manual may be the result.

Respectfully submitted by the committee of editors,

RICHARD C. BARRETT,

Superintendent Public Instruction.

HOMER H. SEERLEY,

President Iowa State Normal School.

No.

To the Teacher:

This pamphlet belongs to this county and is loaned to you only so long as you are actively engaged in teaching in the public schools. The number at the top of the note corresponds with the record number kept by the county superintendent. When you are through with the pamphlet, or cease teaching, you will please return the same to him.

To the County Superintendent:

You are urged to keep a correct account of all copies of this outline, in order that the same may be used year after year in the institute. This may be done by keeping in a record book the name of the person receiving the pamphlet, and opposite the same placing the number which agrees with that above.

RICHARD C. BARRETT,

Superintendent Public Instruction.

COURSE OF STUDY.

WORKING PLANS AND SUGGESTIONS FOR THE IMPROVEMENT AND THE UNIFICATION OF THE IOWA NORMAL INSTITUTES.

PRELIMINARY THOUGHTS AND CONSIDERATIONS.

1. *The problems involved.*

The Iowa Normal Institute is an evolution. For a quarter of a century the best thought and experience of county superintendents, conductors and instructors has been directed to making these short summer convocations of the teachers of the several counties of the state the most interesting, instructive and beneficial that talent, organization and discipline could accomplish. In many counties the chief burden of the work to be done is still that of giving academic instruction. In such cases the sessions should be at least four weeks, and the organization and management should be directed to giving instruction on the more prominent features of the several branches, yet with a realization that an institute can never take the place of a school and that deficiencies in actual scholarship must be corrected by attending school, and that only improvement in the spirit of instruction, in the method of presentation and in the philosophy of arrangement and unification can be accomplished even in a four weeks' session. Only persons who have quite a good fund of knowledge of a branch at the opening of an institute can be expected to actually profit much by the class exercises suitable to be given. In some counties it is possible to give specific attention to the best and most sensible methods of teaching the several branches and not undertake the perfecting of the knowledge of the subject matter to any great extent. In such fortunate localities a two weeks' session will be sufficient to accomplish more real institute work than is usually the result of attempting a mixed method—partly academic instruction and partly institute instruction. Whenever the time comes that institute instruction is actually differentiated from academic instruction and the common confusion is removed, then will the training of teachers in the right and proper way through institute management begin to be a reality.

2. *Organization and management.*

Teachers and those expecting soon to be teachers should be the only persons enrolled at a teachers' institute. The work presented in these pages is not intended for children from the grammar and high school grades who enroll in the institute with the idea that perhaps they may teach some time in the future. It is presented with the thought that the persons to be taught are teachers, differing chiefly in experience and age, and hence are qualified in judgment and in scholarship to consider matters from the teachers' standpoint. While it is necessary to offer most subjects required for teachers' certificates, yet the assignments are, as a rule, too many rather than too few, and too much is attempted in each assignment rather than

too little. To save time this manual is arranged in the order of daily lessons, it being understood that the lesson in each subject assigned to each day must be taken up at that time. Much time and strength is wasted in many institutes by the teachers enrolled not knowing definitely what work will be expected each day of the limited session. A properly organized institute is so systematically planned that the entire program for all the days of the brief session is placed in the hands of each member. This enables study to center about the points to be discussed, and will encourage investigation and develop interest far beyond the indefinite, indeterminate plan so commonly in vogue and that causes most classes to assemble from day to day without any definite and positive knowledge of what the several instructors plan to undertake.

3. *Inspirational influence.*

Teachers need encouragement more than criticism. They should have sympathy, help and uplift rather than drill and discipline. When a teacher gets into the right spirit, when he feels the inspiration of the living side of the business that he follows, then he begins to apply himself diligently to improve, then he finds his disposition to do better increased, and he grows and develops rapidly and continuously. Hence the institute should be so conducted that no daily roll calls, at chapel or in class rooms, should be necessary, and that a final report made by each member at the close of the session would take the place of the formalism that so frequently exhausts so much of the valuable time that should be devoted to the real work of the institute. To assist in attaining the inspiration and the preparatory condition so necessary to a successful day's work of an institute, a bright, helpful, suggestive, encouraging address should be given each morning, as a fitting introduction to the day's thought and effort. Suitable subjects for such addresses are numerous, and they should be chosen from day to day to fit the temper and the needs of teachers in attendance. Such subjects as "Ideals," "Helpfulness," "The Teacher's Province," "Individuality," "Personal Responsibility," "Faith and Works," "The Unusual Element," "Doing More Than Others," "Superiority," "The Supreme Province of Manliness," etc., etc., will develop an atmosphere that will bring results far beyond what is the common experience. Far more should be done for spontaneity and for a right feeling than is commonly undertaken, and the attempt should be made to send the teachers away from a session of an institute never again to be as indifferent, as careless or as lacking in true spirit as they were when they came.

With these conceptions of the aim and the purpose of an institute, with these assurances of the wonderful possibilities to be realized by instructors who "teach with both the spirit and the understanding," these outlines of daily lessons suitable for institute work are submitted, as suggestions and ideas to be realized and worked out by every thoughtful, earnest instructor who uses and studies them rather than as formal lessons to be blindly followed from day to day or from year to year by that grand body of workers who are to be privileged to stand before the rank and file of teachers in the fields of pedagogic thought and action.

THE NORMAL INSTITUTE AS A FIELD OF ACCOMPLISHMENT.

1. *Limits Imposed.*—It is necessary to realize that any session of any organization like the normal institute has decided limitations regarding

the work to be undertaken and the work that can be accomplished. Any assumption that some system of organization or some kind of instructors or some method of applying pressure can overcome these limitations is a serious error. The institute often fails because it undertakes the impossible, because it tries to do more work by remaining in session long hours beyond the limits of reason, and because it permits the teachers to enroll in more classes and attend more recitations than the human mind can endure. The recitations should be at least forty-five minutes long, and no teacher enrolled should be granted the privilege of attending more than five class exercises. It must be always remembered that it is better to profit by a few exercises than to be exhausted and fatigued by the many, and thus be injured rather than benefited.

2. *The Program.*—The constructing of an effective program with suitable rest periods and variations, so as to regard mental laws of activity, is no small task. There is as much of a profitable order to institute work as there is to any other of human activity. The management of an institute should aim at quality rather than quantity, efficiency rather than superfluity, thought-getting rather than thought-impressing, simplicity rather than complexity, interest rather than enthusiasm. To this end, the institute should, as far as possible, not close with an examination for teachers' certificates and should not be conducted upon the compulsory plan of attendance, since it should be so conducted that those who attend will feel that it is a privilege rather than a requirement. The spirit of the management is, therefore, a most important consideration, and can never wisely be overlooked or thrust aside as unnecessary to the best and most far-reaching results.

3. *The Regulations.*—There must be regulations, but they should be of a kind that are reasonable and fair. The teacher's certificate should be graded upon some different basis than a scholarship that is determined by an acquired capability to answer a large percentage of the ordinary stock questions commonly required from year to year, from which much variation is well nigh impossible. The teacher's real grade of certificate should be determined from a different standpoint of ranking than is commonly conceded. Those features are: 1.—Spirit. 2.—Successful experience. 3.—Technical scholarship. The helpfulness of a teacher to the school, to the community and to educational work should constitute the element of spirit, as it means growth and development and larger efficiency. Experience and scholarship are both dead factors and inert influences without spirit.

. *Conducting the Institute.*—This is not a formality nor a function. It is in reality the life-giving influence. Formalism, records, reports, class books, machine regularity, the lock-step, are incidents and externals, not genuine evidences of effective work. The conductor should be a power for helpfulness. He should be a message-giver, a field marshal with inspiration for every worker and a guide to every member enrolled. Great care should be taken in selecting such official, as on his spirit, enthusiasm and helpfulness will depend largely the consequent results.

5. *The Province of Instructing.*—Those who are called to instruct should be specialists to a very high degree. They must be able to "do more than others." It is not enough to fill a place, to consume an hour, to rank as an instructor. It is necessary to do so well that every teacher in the class feels the influence, recognizes the power of the leader and cheerfully fol-

lows the order of his thinking. Instructing in an institute means mastery of method, keenness of style of presentation, readiness of analytic thinking, grasp of essentials and force of directness in control of the mind of others.

6. *The Entertaining Feature.*—There is more or less tendency to dissipation through certain entertaining features frequently introduced. An evening lecture to a properly managed institute where the strongest work is being done is generally a useless extra, because it is an attempt to go beyond what is possible. Many a lecturer has wondered why his institute audience was so lacking in response, so unappreciative of his best efforts, so indifferent to his message when the facts were that the teachers were so exhausted by the daily work required that they were incompetent to enjoy or to profit by the ablest and the most thoughtful efforts on educational lines. There is therefore a limit in the capacity for being instructed or entertained, and large expenditures of money are fruitless in producing desired results after the energy has reached an equilibrium that only rest and recreation can restore to a condition of possible activity.

7. *The County Superintendent's Province.*—This is a distinct field. It is the place of authority, of responsibility and of success or failure. It is a difficult field to manage well, as it requires such large judgment, experience and insight. The success of a superintendent depends more upon what he does before the institute than upon what he does during the session. He will find it very hard to keep strictly his own place and let the plans and methods of organization, that he has determined, have a chance to succeed.

It is easier for the superintendent to attempt to do too much of too many things rather than to actually do the things that he must do and which no other person can really do. There is no kind of school work where there can be so much waste and so much needless organization, or where a steadier head, firmer hand, or a more executive power of thought are so essential. The county superintendent is therefore the dictator of the institute, the author of its plans, the arbiter of its destiny; and he should not undertake to fill this majestic province and also assume to instruct or to perform other variable service, since by so doing he robs the institute of his best work and his best service, as the institute needs still a supervision which is broader, more far reaching and more valuable than the other functions can grant. Supervising an institute is a great business when done in a right way, and nothing should be permitted to degrade or deteriorate this exalted field of official authority, discretion and service.

THE APPLICATION OF THIS MANUAL TO THE INDIVIDUAL INSTITUTE.

This manual is prepared for a four weeks' session of a normal institute, as it is believed that such a length of session is very desirable. Yet where this is regarded as unnecessary or impossible it is practicable to select from the lessons outlined such a number and variety as will best suit the teachers of that particular institute. It has been attempted to make these outlines full and complete so that the whole field of institute instruction may be fairly covered. It is not intended that all here suggested must necessarily be done in any one session of an institute, but such a variety is here presented that in the course of several years this amount of work can well be undertaken and accomplished.

The course in methods here outlined for the several branches is a detail of what seems to be the most practicable and suggestive topics for develop-

ing and illustrating the methods of teaching regarded as the most modern and the most effective. Whether these should be used in place of the academic lessons also given must be left to the discretion of the management of the individual institute, as in some institutes academic work will be required in some branches while method work will be practicable in other branches. To try to fit both needs has been the attempt of the manual, leaving it after all to each county to decide what particular lines or applications are best to be selected.

PROFESSIONAL WORK IN AN INSTITUTE.

The success of didactic work depends entirely upon the knowledge, the experience and the judgment of the instructor. No work can have more value or significance to the teacher. In these outlines an attempt is made to select a series of topics that will suit the particular needs of the different kinds of teachers found enrolled. The plan has been carefully worked out with the belief that there are certain things that an institute should undertake to do for its teachers, and that there are certain other just as necessary things that the institute should leave the teachers to do for themselves. Professional education is a growth and takes time to be accomplished. The themes here given will, therefore, mean more and more to teachers as they advance in knowledge and experience. Just what an instructor should do for any class in any one of these lessons depends upon the class itself, as a constant differentiation must be made to render the work undertaken adaptable to the needs of the special individuals who constitute the class. With this thought uppermost, these lessons are suggested as very useful lines for investigation and discussion under competent direction in the average normal institute.

COURSE OF STUDY
OUTLINES IN DIDACTICS.

FIRST YEAR.

Lesson I.—The teacher's calling.

1. Its importance.
2. Difficulties and drawbacks.
3. Compensations.
4. Why teachers fail.

Lesson II.—The teacher's preparation.

1. Desirable natural qualifications.
2. General preparation.
3. Professional training.
4. Daily study.

Lesson III.—Means of growth professionally.

1. Schools.
2. Professional books and papers.
3. Institutes.
4. Teachers' associations and reading circles.

Lesson IV.—Our common school system.

1. Its purpose.
2. How supported.
3. School officers and their duties.
4. Relation of the school to the home.

Lesson V.—How to make a start as a teacher.

1. Why the first term will probably be in a country school.
2. How to secure the school.
3. How not to secure it.
4. The legal qualifications of the teacher.
5. The contract.
6. Boarding place.

Lesson VI.—The first day.

1. The school register—its value if rightly kept.
2. Condition of the schoolhouse.
3. Seating.
4. School signals.
5. Temporary program.

Lesson VII.—Permanent organization.

1. Classification of pupils.
2. Permanent program, showing divisions, classes, recitations, study periods, general exercises.
3. General regulations.

Lesson VIII.—Defects in aim.

1. To fail to make *pupil improvement* the supreme end of all school organization and work.
2. To neglect physical training.
3. To ignore training in morals and manners.
4. To regard books as the only means of educating the child.
6. To fail to make friends of all the patrons.

Lesson IX.—The physical factors in education.

1. The condition of the school-room.
2. The pupil's general health, food, clothing.
3. The nervous system—organs, structure, general functions.

Lesson X.—The special senses.

1. Organs and their structure.
2. Importance and function of each sense.
3. Defects.
4. Training.

Lesson XI.—How children learn.

1. Meaning and nature of sensation and perception.
2. Value of object-lessons and nature study.

Lesson XII.—How children learn.

1. The laws of association—state, explain, illustrate, and apply to the different branches of study.

How new ideas are grasped and assimilated by means of old ideas.

Lesson XIII.—The teaching process.

1. The pupil's part.
2. The teacher's part.
3. Results of working at cross purposes.

Lesson XIV.—Mistakes in method.

Lesson XV.—Mistakes in method.

Lesson XVI.—Mistakes in management.

Lesson XVII.—Mistakes in discipline.

Lesson XVIII.—Mistakes in discipline.

Lesson XIX.—The relations of the teacher to the community.

1. Religious.
2. Political.
3. Social.
4. Professional.

Lesson XX.—What can be done to improve our public schools?

In preparing these lessons teachers should study Page's Theory and Practice of Teaching, School Laws of Iowa, Rooper's Apperception, Hughes' Mistakes in Teaching, and any ordinary physiology. If the time is limited, the instructor should select such lessons as he may deem most practical, rather than to attempt to cover the entire course.

SECOND YEAR.

Lesson I.—Legal duties and relations of the teacher.

1. To the county superintendent.
2. To school officers.
3. To pupils and patrons.

Lesson II.—Opening and general exercises.

1. Objects and value.
2. Kinds.
3. Methods of presentation.

Lesson III.—Study.

1. What is study?
2. Objects.
3. Incentives.
 - a. Doubtful.
 - b. Proper.

Lesson IV.—Study.

1. How to study.
2. When to study.
3. Favorable conditions.

Lesson V.—The recitation.

1. Importance.
2. Aims.
3. Requisites.

Lesson VI.—The recitation.

1. Methods.
2. Results.

Lesson VII.—Causes of the pupil's lack of interest.

1. In the pupil himself.
2. In the teacher.
3. In the pupil's surroundings.
 - a. Out of school.
 - b. In school.

Lesson VIII.—School apparatus.

1. What is necessary?
2. How to secure it.
3. How to use it.
4. How to take care of it.

Lesson IX.—School government.

1. Good order defined.
2. Importance of order.
3. Causes of disorder.
4. Consequences of disorder.
 - a. Direct and immediate.
 - b. Remote.

Lesson X.—Indirect means of securing and maintaining order.

1. Through public sentiment.
 - a. Of patrons and school officers.
 - b. Of pupils.
2. Through comfortable physical surroundings.
3. Through the teacher's qualifications and personality.
4. Through the organization and occupation of the school.

Lesson XI.—Direct means of securing and maintaining order.

1. Authority, rules and regulations.
2. Coercion and punishment.
 - a. When justifiable.
 - b. Forms, (1) proper, (2) improper.
 - c. How administered.

Lesson XII.—How to manage the "little things."

1. Movements of classes.
2. Change of work.
3. Wraps, books, materials, etc.

Lesson XIII.—Pupil study.

1. Importance of child study.
2. Necessary qualifications.
 - a. Good power of observation.
 - b. Interest in children and sympathy with them.

- c. Power to interpret observed facts and to infer causes from effects.
 - 3. Fundamental questions.
 - a. What did the child do?
 - b. What does the action mean?
 - Lesson XIV.—Pupil study.
 - 1. Methods of study.
 - a. Miscellaneous notes and observations.
 - b. Physical tests.
 - c. Statistical.
 - d. Reminiscent.
 - e. Study of child's drawings, play, interests and ambitions, favorite stories, emotions, etc.
 - 2. Aids to study.
 - a. Close association with pupils.
 - b. Conversations with parents.
 - c. Outlines, syllabi, record book.
 - d. Some good book on child study.
 - Lesson XV.—Value of pupil study to the teacher.
 - 1. Brings her into right relations to pupils.
 - 2. Prevents hasty reproof, incorrect judgments, misunderstandings and ill advised punishment.
 - 3. Creates interest in individual children and sympathy for them.
 - 4. Enables her to appeal to the child's best nature and highest motives.
 - Lesson XVI.—Text-books.
 - 1. Characteristics of a good text-book.
 - 2. Use of the text-book by the teacher.
 - a. In preparing the lesson.
 - b. In the recitation.
 - Lesson XVII.—Educational principles, methods and devices.
 - 1. Explain and define.
 - 2. Illustrate.
 - 3. Apply in leading branches.
 - Lesson XVIII.—School libraries.
 - 1. How to secure a library.
 - 2. Value and dangers.
 - 3. What books to buy.
 - 4. How to use the school library.
 - Lesson XIX.—Special problems in rural schools.
 - 1. What?
 - 2. How best solved.
 - Lesson XX.—The teacher's influence.
 - 1. Personal habits, speech, dress, etc.
 - 2. Manners and morals.
- The lessons in this grade are based on Wickersham's School Economy, Hughes' How to Keep Order, and Taylor's Study of the Child.
- THIRD AND FOURTH YEARS.
- Lesson I.—The school.
 - 1. How composed.
 - 2. Its aims, objects and possibilities.
 - 3. What school work is.

4. The tests of school work.
 - a. Immediate.
 - b. Remote.

Lesson II.—The teacher.

1. Qualifications.
2. Personality and spirit.
3. Responsibility.

Lesson III.—Teaching.

1. Nature of the process.
2. Essentials of effective teaching.
 - a. Knowledge of mental processes.
 - b. Good preparation.
 - c. Definite aim.
 - d. Correct methods.
 - e. Earnestness, zeal, good judgment and sympathy.

Lesson IV.—The lesson.

- 1 Kinds.
 - a. Information lessons.
 - b. Training lessons.
 - c. Drills, reviews, tests.
2. Teacher's preparation of the lesson.
 - a. Acquisition.
 - b. Selection and arrangement.
 - c. Correlation with other lessons.

Lesson V.—The art of questioning.

1. Value of questioning.
2. Qualifications of the skillful questioner.
3. Kinds of questions.
 - a. Testing questions.
 - b. Training questions.

Lesson VI.—The art of questioning.

1. Purpose of questioning.
2. Forms of questions.
3. Faulty questions.
4. Treatment of answers.
 - a. Characteristics of good answers.
 - b. Bad answers.
 - c. How to deal with answers.

Lesson VII.—Illustrations.

1. Object and advantages.
2. Kinds.
 - a. Those that appeal to the senses: (1) Blackboard illustration (2) charts, pictures, maps; (3) objects and models; (4) experiments; (5) dramatic illustrations.
 - b. Those that appeal to the imagination, as stories, figures of speech, personal incidents and experiences, descriptions.

Lesson VIII.—Attention.

1. Definition and nature.
2. Importance.
3. Kinds.
4. Characteristics of good attention.

Lesson IX.—How to secure and hold attention.

1. Necessary conditions.
 - a. Good sanitary conditions.
 - b. Proper classification.
 - c. Good order.
 - d. Personality and skill of teacher.
2. Suggestions for training the power of attention.

Lesson X.—Training the senses.

1. Aims.
2. Material.
3. Method.
 - a. Purpose of the object lesson.
 - b. Good and bad object lessons.
4. Nature study.

Lesson XI.—Training memory and imagination.

1. Nature of the representative process.
2. Objects.
3. Material.
4. Methods.
5. The culture epoch theory.

Lesson XII.—Training the reasoning powers.

1. How general concepts are formed.
2. Nature of induction and deduction.
3. Methods of cultivating the judgment.

Lesson XIII.—Culture of the emotions.**Lesson XIV.—Will-training.**

1. Opportunity for such training in school work.
2. Habits that pupils should form in school.
3. How to break up bad habits.
4. Relation of habit to character.

Lesson XV.—Methods of teaching reading.

1. Aims.
2. Nature and elements of good reading.
3. Guiding principles.
4. Correction of errors.
5. Silent reading.
6. Supplementary reading as a means of cultivating a taste for good literature.

Lesson XVI.—Methods of teaching arithmetic.

1. The relation of mental to written work.
2. Inductive work.
3. Drill work.
4. Change from object reading to abstract thinking.
5. What to do with rules.
6. Short methods and supplementary practical work.

Lesson XVII.—Methods of teaching language and grammar.

1. Scope and object of this work.
2. Relation of grammar to language, reading, spelling and other branches.
3. Composition work.
4. Use and abuse of the text-book.
5. Guiding principles.

Lesson XVIII.—Special problems of the graded school.

1. Differences between rural and graded schools.
 - a. In pupils and their environment.
 - b. In courses of study.
 - c. In organization.
 - d. In methods.
 - e. In supervision.
2. Advantages and possibilities of the graded school as compared to the rural school.

Lesson XIX.—School sanitation.

1. Ventilation and warming.
2. Lighting.
3. Seating.
4. Tests of vision and hearing.
5. Contagious diseases.

Lesson XX.—Pestalozzi, the ideal teacher.

1. Formative influences in his life.
2. His aims.
3. Writings.
4. Principles and methods.
5. Spirit and influence.

References—Tompkin's *School Management*, Landon's *Art of Questioning*, Hughes' *Securing and Retaining Attention*, Halleck's *Psychology and Psychic Culture*, Roark's *Method in Education*, De Guimp's *Life and Writings of Pestalozzi*.

SUBJECTS FOR PROFESSIONAL COURSE.

1. The fundamental aims and principles of education.
2. Value of psychology to the teacher.
3. Induction and deduction in teaching.
4. Foundations of method.
5. The formal steps in the recitation.
6. Nature of interest.
7. Productive work in the school room.
8. Relative value of studies.
9. Educational waste.
10. School government.
11. The report of the committee of fifteen.
12. Supervision.
13. Teachers' meetings.
14. The coming teacher.
15. "Unconscious tuition" of the teacher.
16. Obstacles in the way of better schools: Remedies.
17. Examinations, promotions and graduation.
18. Common sense child study.
19. Great educators and their theories.
20. The schools and the people.

NOTE.—Any of the above topics are regarded as also very suitable for teachers' associations.

SCHOOL LAW FOR TEACHERS.

There is no good excuse any more for public school teachers not being acquainted with the statutes and decisions under which they work. These laws are of such a nature that they ought to be taught in institutes, and the legal rights and duties of the school officers, the teachers, the patrons and the pupils is therefore regarded as of sufficient importance to warrant that brief outlines be here presented, and that the facts connected therewith may find a place in the studies of every teacher in Iowa.

LESSONS DESIRABLE TO BE GIVEN.

Lesson I.—The school district.

1. Its corporate rights and privileges.
2. Its organization for business.
3. Its electors and elections.
4. Varieties of such corporations.
5. Territorial limits.
6. Meetings of the corporation.
7. Authority of said meetings.
8. Sub-districts and the authority of the same.
9. Support of the schools.
10. School bonds.
11. Schoolhouse sites.

Lesson II.—The school board.

1. Membership.
2. General authority.
3. Authority in session and otherwise.
4. Variety of directors as to different school districts.
5. Qualifications of directors.
6. Meetings of directors.
7. Officers of the board.
8. Bonds of officers.
9. Duties of officers.
10. School warrants.
11. Certifying tax.
12. Varieties of taxes.
13. Limit of taxation.
14. Rules and regulations of school.

Lesson III.—The school board.

15. Course of study.
16. Teaching physiology.
17. Departments and kinds of schools.
18. Contracts,—how made?
19. Election of teachers.
20. Dismissal of teachers.
21. Trials.
22. Paying claims.
23. Visiting schools.
24. Maintaining discipline of schools.
25. Text-books.
26. Shade trees.

27. The Bible.
28. Securing school sites.
29. Erecting school buildings.
30. General matters at the discretion of the board.

Lesson IV.—The school teacher.

1. How given legal authority?
2. Character of examination by law.
3. Value of a license to teacher.
4. Revocation of the same.
5. Attend normal institute.
6. What constitutes a teacher's contract?
7. Rules and regulations.
8. Kindergarten teacher.
9. The teacher's rights—when not satisfactory?
10. Holidays and vacations.

Lesson V.—The school teacher.

11. How withdraw properly and legally from a contract?
12. Diseases in the school.
13. Suspension of pupils from school.
14. Penalty for not having a teacher's certificate.
15. Reports and records.
16. Institutes and teachers' meetings.
17. Devotional exercises.
18. Appeals to higher authority.
19. Course of study and physiology.
20. Good moral character of teachers—what is implied?

Lesson VI.—The school patrons.

1. Residence rights.
2. Elective franchise.
3. Annual school meeting.
4. Schoolhouses.
5. Changing text-books.
6. Course of study.
7. Selling property.
8. Wards.
9. Schoolhouse fund surplus.
10. Schoolhouse tax.
11. Special meetings of the people.
12. Conduct of a school election.
13. Registration of voters.
14. Appeals from action of board.
15. Rights as to the course of study.
16. Children on the way to and from school.
17. Rights of patrons regarding suspension and expulsion of children.
18. Nonresident children and their parents.
19. Religious instruction.
20. Condemnation of school sites.

Lesson VII.—The pupil.

1. Legal age.
2. Rights of attending school.
3. What has he a right to study?
4. Who says where he must begin each term?
5. When attend school in another district?
6. Physiology and hygiene.
7. Obey rules and regulations.
8. Transportation of.
9. Indigent pupils and school books.
10. Reading Bible.
11. Free text-books.
12. Purchase text-books.
13. Punishment for offenses.
14. Suspension, etc.
15. Tardiness.
16. Attendance bad.
17. When is corporal punishment not legal?
18. Over age, how attend school?
19. Rights on the streets and highways.
20. For what responsible to the teacher regarding matters outside of school hours?

Lesson VIII.—The school superintendent.

1. Varieties of supervision allowed by law.
 - a. State.
 - b. County.
 - c. City.
 - d. School board.
2. Authority for city superintendent's selection.
3. Who can be a city superintendent?
4. Duties of city superintendent.
5. Province of said officer.
6. Power to dictate.
7. Power to govern.
8. General duties—how determined?
9. Why employed only in independent districts?
10. Visiting schools.
11. Holding teachers' meetings, etc.

Lesson IX.—The county superintendent.

1. Other official positions.
2. Qualifications.
3. Selection, how made?
4. Under whom and to what extent?
5. Visitation of schools.
6. Authorizing persons to teach.
7. Revoking certificates.
8. Normal institute.
9. Report to whom and about what?
10. Salary.
11. Schoolhouse plans.

12. Condemning school sites.
13. School trials.
14. County board of education.
15. Authority when visiting schools.
16. Educational meetings.
17. Responsibility for success of schools.
18. Limits of his services that are reasonable.
19. Magnitude of his work.
20. Qualifications essential.

Lesson X.—General matters.

1. State superintendent.
2. State board of educational examiners.
3. The state schools and their educational province.
4. Deficient sight and hearing, etc., of pupils, and rights in such cases.
5. Women voting at school elections.
6. County high school.
7. Library in schools.
8. Apparatus for schools.
9. Oath of school officers.
10. School month.
11. School taxes—limits.
12. School orders and their negotiability.

NOTE.—The subject of school law can well be given as a general exercise before the institute.

READING.

Outline for twenty lessons in reading.

Volume I.—Psychological Development of Expression, by Mary A. Blood and Ida M. Riley, used as text.

Lesson I.—Preparatory to the reading lesson proper.

1. Author's life and circumstances under which selection was written.
2. If selection is a cutting, study of the whole for setting.
3. If historical, discussion of events, bearing upon selection.
4. Side lights furnished by supplementary reading from history or literature that will add to the interest and vividness of selection and present it in its true setting.

NOTE.—The best of literature should be selected for study in order to cultivate a love and appreciation for good literature.

The supplementary reading should be assigned to different pupils to report upon.

Lesson II.—How to study the reading lesson.

1. Read selection as a whole to get general idea.
2. Use of the dictionary for the pronunciation and meaning of unfamiliar words.
3. Supplementary reading for setting.
4. Read selection again for definite pictures.
 - a. Of characters—physical and mental characteristics.
 - b. Of scenes, places described, etc.
5. Read aloud to give to others what has been obtained from printed page

NOTE.—The first two outlines are to be suggestive rather than lessons. The first to suggest how the lesson can be made most interesting and profitable in the class-room. The second to suggest to the students how to study any lesson.

Lesson III.—Thought conception. Simple statement of fact.

1. Relation of thought values.

- a. Making the points in each separate thought stand out clearly.
- b. Relating to the subordination of thoughts which should be subordinated and making prominent the thoughts which should be prominent. Selection to be used, Fizziwig's Ball.

NOTE.—To be brought out by clear comprehensive questions and explanations by the teacher. A question for thought values often brings a response to thought and secures stronger expression.

Lesson IV.—Illustrative drill on thought tunes.

1. Take the sentence, "Yes, he's nice," for work, giving it with different thoughts back of the words.
 - a. Show first that he is nice but others of his family, or people of whom you have been speaking, are not.
 - b. Show that he is nice but that there is a reservation and you do not approve of him notwithstanding his good qualities.
 - c. Show that you think he is nice without any reservation.
 - d. Show that you are willing to admit that he is nice but that you do not wish to commit yourself fully.
 - e. Take other words and phrases, supplying different motives for their presentation. Examples: "Yes," "Good morning," "I think so," "John said he would go," etc.

Lesson V.—Thought conception continued. The thoughts being not only apprehended but comprehended while being spoken.

1. Training of eye to grasp thought from printed page readily.
2. Of mind to hold the thought while giving it orally.
3. Of voice to give the intellectual tone color to the words which only comes with full realization of what they mean.

Selection—Mary's Night Ride.

Lesson VI.—Illustrative drill on words and phrases, showing the difference between giving them with tone color, or suggesting this meaning in the voice, and without. Examples for practice work: Cold, bleak, warm, strong, one hundred years old, dangerous illness, light as a feather, a good man, etc., illustrated by teacher, and then class drill and individual drill.

Lesson VII.—Thought conception continued. Discussion of mechanical aids to clear conception.

1. Punctuation as an aid to mental grasp of author's thoughts.
2. Errors in teaching punctuation as an aid to oral interpretation.
3. Time. The difference between "rhetorical pauses" and taking time to get the author's thought in all its fullness and giving the class time to get one thought from reader before being carried on to the next.

4. Value of the suggestiveness of hearing good readers read.

5. Bad results of imitation in reading.

Selection—New Year's Morning.

Lesson VIII.—Picture work.

1. Out of sense materials—hills, roads, scenes, etc.—which class have seen to construct the pictures set forth in selection.
2. From experiences in real life or through the imagination to see the situations and action of selection.

Selection—Summer Storm.

Lesson IX.—Picture work continued.

1. From characters in real life, books and imagination to construct characters in selection and respond to them.
 - a. Physical characteristics.
 - b. Mental characteristics.

Selection—Pickwickians Take a Drive.

Lesson X.—Picture work continued.

1. To form ideal sounds, listen to them and respond to them.
 - a. Recalling sound from memory.
 - b. Forming purely ideal sounds from imagination.

Selection—Organ Music.

In connection with this lesson might be given some voice work, using the resonant syllables mōn, mōn, mōn, mine on different pitches, taking teacher's voice for ideal at first. Careful formations with the lips to be observed to bring the voice forward and round the tones. Other syllables, such as "lo," "ring," "no," etc., may be used in the same way.

Lesson XI.—Emotions. Egoistic.

1. Making the pupil feel what he is saying. Taking the simple emotions and expressing while on the floor.

Selection—Mrs. Caudle urges the need of Spring clothing.

Lesson XII.—Emotions, social.

Pupil yields himself more fully to spirit of selection, and by carrying the work of the preceding lesson further to arouse the same feeling in his hearers that he himself has.

Selection—Rising of 1776.

Lesson XIII.—Will—Directing thoughts to class.

1. Forgetfulness of self in message.
2. Directing thoughts to some one, first to teacher or classmate, in a natural, conversational style.
3. Carrying it further and including the whole class.

Selection—Dinner at the Cratchett's.

NOTE.—This step is intended to insure the pupil against affectation and absurdities of speech and bring simplicity and directness.

Lesson XIV.—Work in directness continued. Commanding attention.

1. By pupil's will to command the attention of the class.
 - a. To be accomplished by imagining situations that would be an incentive—that he is the orator on a great occasion—that the class are children who must be entertained, etc.

Selection—The Revelation of a Stone.

Lesson XV.—Will—Purpose.

1. To accomplish the purpose of the author and produce the effects upon the listeners' minds that the author intended to be produced in the minds of his readers.

Selection—Toussaint L' Ouverture.

NOTE.—This step will help to develop extemporaneous speakers.

Lesson XVI.—Life. Response to thought in body.

1. Illustrated by teacher taking a sentence at a time and giving it with life and without.
2. Drill work with class taking a sentence at a time and giving it with life and without.
3. Work with individuals the same way.

Examples. "Go!" "Halt!" "Down with the traitor!"

Lesson XVII.—Life continued. Vigor.

Carrying the steps of preceding lessons further. The intellect presenting more vivid pictures. The emotions to be more strongly aroused and the will transferring emotions and pictures to hearers. Life providing definite form and carrying power so that it reaches the farthest hearer.

Selection—The Boat Race.

Lesson XVIII.—Life continued. Momentum.

Work for carrying power in selections that do not aid in giving life. Have pupils learn paragraphs in selection that they may be perfectly free to respond fully with body as well as voice.

Selection—Exile of the Acadians.

Lesson XIX.—Lesson in sight reading.

Practical application of thought method to enable reader to grasp new thoughts and forms readily and to give to others with expression what has been obtained from printed page, without preparation.

Lesson XX.—Discussion of methods in teaching reading and how to get results. How to get clearer thinking, directness, feeling, life, etc., by stimulating the imagination and refreshing the memory with word paintings; by asking leading questions; by similar pictures, stories, experiences that will bring more definite conceptions and more vivid pictures, bringing a response in mind, voice and body.

NOTE.—Drills in vowel sounds should be given in connection with the lessons in order to polish the pronunciation and train the ear to distinguish between correct and incorrect sounds.

Simple exercises in physical culture should be given to bring the body to correct position, to free the muscles and organs of voice and to make the body responsive.

Reference books for reading:

Special Method in Reading—McMurry.

How to Teach Reading in the Public Schools—S. H. Clark.

ARITHMETIC.

As stated elsewhere in this course of study, membership in the institute pre-supposes a fair knowledge of the facts and principles of arithmetic, comparative accuracy in performing the simple operations required and a reasonable ability to reason in the science. This being true, the work of the institute must necessarily be the investigation of the methods of presenting the subject to others. It is a search for the "reasons why" and the "what to say in explaining arithmetic."

To meet this successfully requires that much time and energy be devoted to comparing the relations of the elements which enter into the various subjects in arithmetic. It also requires much thought upon the inter-relations existing among the subjects themselves. The basis for this part of the work is the definitions, principles, and axioms, and if there is to be successful work, these must be learned. Exactness in definition is an absolute essential in any science. Allowing pupils "to give the thought in their own language" is responsible for much of the difficulty found in mathematics.

The method employed in any computations in arithmetic should always be based upon where the process is to be applied. For example: The most frequent use of common multiples and common divisors is in fractions and the commonly presented methods for finding these are of little or no value in fractions, but a little thought will devise a method by inspection which is very practical for use in fractions. This is also true of cancellation, involution and evolution. If this plan for determining methods be adopted, the result will be a doing away with most of the long accepted, isolated, mechanical processes.

Arithmetic is most emphatically a disciplinary study, and to try to present it from the practical or the utilitarian standpoint is to cripple the pupil in his abilities to reason. It is also, except the small part of it known as mensuration, an abstract science, and to present it concretely is to court disaster and shortages on the part of the pupils. Teachers are very apt, especially in fractions, to present the objective, when if there was the proper presentation of definitions and relations, all of the operations in fractions would be seen to be the direct outgrowth of those in integers. By recognizing this fact and proceeding in accordance with it will go far towards unifying the work which now is so segregated.

In preparing this outline of lessons in arithmetic, the thought has been kept constantly in mind that the study of arithmetic includes very much more than the mere solving of problems under the various subjects. It is intended to call out a maximum of thought and a minimum of the mechanical operations. Much attention should be given to the synthesis suggested throughout the outline. A power of thought can be developed by the use of such exercises that can be obtained in no other way. If care be taken to have the problems take as wide a range as possible, the exercise will give the pupil a grasp of the subject which cannot be obtained by solving problems.

ARITHMETIC.

FIRST YEAR.

Lesson I.—Notation.

1. Roman notation. Define.
 - a. Letters used and their values.
 - b. Principles governing the use.
 - c. Drills in writing numbers.
2. Arabic notation. Define.
 - a. Characters used.
 - b. Orders of units.
 - c. Drills in writing both integers and decimals.

Lesson II.—1. Numeration. Define.

- a. Correct use of the word "and."
- b. Two ways of reading mixed decimals.
- c. Drills reading—three orders to the period or French system.
- d. Drills reading—six orders to the period or the English system

Lesson III.—Fundamental operations.

1. Addition. Define.
 - a. Terms used—addends—sum.
 - b. The sign. Its force when used alone and when combined with multiplication, division or aggregation.
 - c. Drills for rapid work.
 1. Speaking the sum of two numbers at sight.
 2. Speaking the sum of three numbers at sight.

Lesson IV.—d. Cases requiring addition—synthesis of problems.

- e. Synthesis of problems, also solving problems.

Lesson V.—2. Subtraction. Define.

- a. Terms used—minuend—subtrahend and remainder. Compare with addition.
- b. The sign. Its force when used alone, and when combined with other signs.
- c. Drills for rapid work.
 1. Speaking the difference between two numbers at sight.
 2. Speaking the difference between one number and the sum of two others at sight.

Lesson VI.—d. Cases requiring subtraction. Synthesis of problems.

- e. Synthesis of problems, also the solving of problems.

Lesson VII.—3. Multiplication. Define.

- a. Terms used. Multiplicand, multiplier and product. Compare with addition.

- b. The sign. Force when used alone and when combined with other signs.
 - c. Drills for rapid work.
 - 1. Speaking product of two numbers at sight.
 - 2. The sum of two numbers multiplied by a third.
 - 3. The difference between two numbers multiplied by a third.
- Lesson VIII.—d. Cases requiring multiplication. Synthesis of problems.
- Lesson IX.—4. Division. Define.
- a. Terms used. Dividend, divisor and quotient. Compare with multiplication. Compare with subtraction.
 - b. The signs. Force when used alone and when combined with other signs.
 - c. Drills for rapid work.
 - 1. Speaking the quotient from two numbers.
 - 2. The product of two numbers divided by a third.
 - 3. The sum and the difference of two divided by a third.
- Lesson X.—d. Cases requiring division. Synthesis of problems.
- Secondary operations.
- Lesson XI.—1. Factoring. Define.
- a. Divisibility of numbers.
 - b. Drills on numbers below 100.
 - c. Drills on numbers above 100.
2. Cancellation. Define.
- a. Drills.
- NOTE.—Do not allow the numbers to be crossed out. Make a thorough drill of it.
- Lesson XII.—3. Common divisors. Define.
- a. Methods for finding compound.
 - b. Drills in the inspection method.
 - c. Synthesis of problems requiring the finding of the G. C. D.
- Lesson XIII.—4. Common multiples. Define.
- a. Methods for finding compound.
 - b. Drills in the inspection method.
 - c. Synthesis of problems requiring the finding of L. C. M.
- Lesson XIV.—5. Involution. Define.
- a. Index of power.
 - b. Finding a power. Simple index. When the index is composite.
 - c. Drills in squaring numbers consisting of tens and units by the formula, " $T^2+2(T \times U)+U^2$."
- Lesson XV.—d. Drills in cubing numbers consisting of tens and units by the formula, " $T^3+3(T^2 \times U)+3(T \times U^2)+U^3$."
- Lesson XVI.—6. Evolution. Define.
- a. Square root. Define.
 - 1. Square root from factors. $\sqrt{8 \times 12 \times 6} = 4 \times 2 \times 3$.
 - 2. Square root of perfect powers by inspection, by reversing involution.
- Lesson XVII.—3. The common process.
- Lesson XVIII.—b. Cube root. Define.
- 1. Cube root from factors.
 - 2. Cube root of perfect powers by inspection.

Lesson XIX.—3. The common process.

Lesson XX.—c. The principles upon which applications depend.

- d. Synthesis and solution of problems requiring the extraction of roots.

SECOND YEAR.

Ratio, Proportion and Partnership.

Lesson I.—1. Ratio. Define.

- a. Terms used. Antecedent, consequent, couplet—simple, compound.
- b. Sign or how expressed.
- c. Principles governing a change in the terms.

Lesson II.—2. Proportion. Define.

- a. Terms used. Antecedents, consequents, means, extremes, mean proportional, simple proportion, compound proportion.
- b. Signs or how expressed.
- c. The principles.

Lesson III.—d. Forms of statement. Proportion, cause and effect, and analysis.

Lesson IV.—e. Its application to measurement of wood, masonry, carpeting, similar surfaces and similar solids.

- f. Synthesis and solution of problems.

Lesson V.—3. Partnership. Define.

- a. Terms used. Simple partnership, compound partnership, capital, profit, loss.
- b. Principles.
 1. When times are equal.
 2. When capitals are equal.
 3. When both capital and time are unequal.

Lesson VI.—c. Problems to illustrate. Solved.

Common and Metric Measures.

Lesson VII.—1. Measures of extension. Define.

- a. Common table.
- b. Surveyor's table.
- c. Mariner's table.
- d. Metric table.
- e. Drills in reduction.

2. Measures of surface. Define.

- a. Common table.
- b. Surveyor's table.
- c. Metric tables.
- d. Drills in reduction.

Lesson VIII.—3. Measures of volume. Define.

- a. Common table.
 - b. Metric tables.
 - c. Drills in reduction.
4. Measures of capacity. Define.
- a. Dry measure.
 - b. Liquid measure.
 - c. Apothecaries' liquid measure.
 - d. Metric measure.
 - e. Drills in reduction.

Lesson IX.—5. Measures of weight. Define.

- a. Avoirdupois table.
- b. Apothecaries' table.
- c. Troy or mint table.
- d. Metric table.
- e. Drills in reduction.

6. Miscellaneous measures.

- a. Bunchings. *Two tables.*
- b. Time.
- c. Angular space.
- d. Drills in reduction.

Lesson X.—7. Compound addition and subtraction.

- a. How performed.
- b. Drills in the computations.
- c. The practical applications.

8. Compound multiplication.

- a. How performed.
- b. Drills in computations.
- c. The practical applications.

Lesson XI.—9. Compound division.

- a. How performed.
- b. Drills in the computations.
- c. The practical applications.

Lesson XII.—10. Longitude and time.

MENSURATION.

Lesson XIII.—1. Lines. Define.

- a. Kinds: straight—(parallel, perpendicular, horizontal), broken, curved.

2. Angles. Define.

- a. Right.
- b. Oblique. (Acute, obtuse).

Lesson XIV.—3. Plain figures.

- a. Terms. Area, polygon, regular, perimeter, similar, base, altitude.
- b. Triangles. Define. How find area.
- c. Quadrilaterals. Define. How find area.

Lesson XV.—d. Circles. Define. How find circumference. How find area.

- e. Other regular figures. How find area of each.
- f. Drills from problems.

Lesson XVI.—4. Solids. Define.

- a. Terms used. Base, edge, face, altitude, slant height, lateral surface, volume, equivalent solids.
- b. The prism. Define. How find lateral surface. How find volume.

Lesson XVII.—c. The cylinder. Define. How find convex surface. How find volume.

Lesson XVIII.—d. Pyramid and cone. Define. How find lateral surface. How find volume.

- e. Sphere. Define. How find the surface. How find the volume.
- f. Drills from problems.

Lessons XIX and XX.—5. General problems in mensuration.

THIRD YEAR.

Fractions.

Lesson I.—1. The terms used.

- a. Numerator. b. Denominator. c. Fractional unit. d. Similar. e. Dissimilar.

2. Classes of fractions.

- a. As to value. Proper and improper.
- b. As to form. Simple, compound, complex, mixed numbers, continued.

Lesson II.—3. Reduction. Illustrate each process.

- a. To lowest terms.
- b. To highest terms.
- c. To whole or mixed numbers.
- d. Mixed numbers to improper fractions.
- e. Compound to simple.
- f. Complex to simple.
- g. Simple to continued.
- h. Continued to simple.
- i. To a common denominator.
- j. To a decimal.
- k. Decimals to common fractions.

Lessons III.—1. Drills should be arranged for each of the above.

Lesson IV.—4. Addition.

- a. How performed.
- b. Synthesis and solving of problems.

Lesson V.—5. Subtraction.

- a. How performed.
- b. Synthesis and solving of problems.

Lesson VI.—6. Multiplication.

- a. How performed and why.
- b. Synthesis and solving of problems.

Lesson VII.—7. Division.

- a. How performed and why.
- b. Synthesis and solving of problems.

Lesson VIII.—8. The application to problems.

- a. Giving the whole and a fractional part, to find the value of that part.
- b. Given the fractional part and its value, to find the whole.
- c. Given the whole, to find the value of a fractional part more or less than that whole.
- d. Given the value of a fractional part more or less than the whole of a thing, to find the value of the whole.
- e. Given the relative fractional parts and the value of their sum or their difference, to find the value of each.
- f. Given the fractional part of a fractional part and its value, to find the value of the whole.
- g. Given the fractional part of one in terms of a fractional part of another and the value of the sum or the difference of the numbers, to find the numbers.
- h. Form problems to illustrate each of these and note how they must be solved.

Lesson IX.—9. Solving of promiscuous problems in fractions.

PERCENTAGE.

Lesson X.—1. Its relations to fractions considered.

2. Terms. Base, rate, per cent, percentage, amount, difference. Define each.
3. Illustrate each from problems.
4. Illustrate the fact that there are both factors and products to be considered in the work.

Lesson XI.—5. The possible operations.

- a. The base multiplied by the rate expressed decimally equals the percentage.
- b. The base multiplied by one plus the rate expressed decimally equals the amount.
- c. The base multiplied by one minus the rate expressed decimally equals the difference.
- d. The percentage divided by the rate expressed decimally equals the base.
- e. The percentage divided by one per cent of the base equals the rate per cent.
- f. The amount divided by one plus the rate expressed decimally equals the base.
- g. The difference divided by one minus the rate expressed decimally equals the base.

NOTE.—Form problems to illustrate each of these operations. Also form such as will combine two or more of them.

Lesson XII.—6. Applications without time.

- a. Profit and loss. b. Commission. c. Brokerage and stocks and bonds.

Lesson XIII.—e. Exchange. f. Insurance. g. Taxes and duties. h. Trade discount.

NOTE.—Each of these should be studied as follows: 1. Terms used and defined. 2. The possible operations which are parallel with those in Lesson VIII. They should be read with the specific names of the application substituted. 3. Problems to illustrate how each possible operation should be formed.

Lesson XIV.—Miscellaneous problems solved in the applications without time.

Lesson XV.—7. Applications with time.

- a. Interest—Its elements and possible cases. Compare the operations with those of Lesson VIII. Substitute the specific names and read.

Lesson XVI.—b. True discount. Its elements and possible cases. Compare the possible operations with those of Lesson VIII. Read them as directed above.

Lesson XVII.—c. Bank discount contrasted with each of the above. Its elements and possible cases. Compare the possible operations as above.

Lesson XVIII.—Partial payments. United States rule. The merchants rule and annual interest rule compared.

The same problem solved by each and the results compared.

Lesson XIX.—Equation of payments.

Lesson XX.—Miscellaneous problems solved in each of the applications with time.

LESSON SUBJECTS FOR METHODS WORK IN ARITHMETIC.

1. How much is lost and in what way by having pupils commence this number work too early?
2. How much of arithmetic is concrete and how much of it is abstract?
3. What is the proper limit to be placed upon working with objects in the teaching of arithmetic?
4. The various subjects of arithmetic considered from the fact that *addends*, *sums*, *products* and *factors* are the only elements with which the pupil has to deal in the solving of problems.
5. The fraction considered as an unexecuted division. Show that all of the operations are the direct outgrowth of the principles of division and multiplication of integers.
6. Percentage treated as a part of fractions, since the denomination in fractions is always 100. Compare the problems and solutions under each.
7. Percentage considered from the fact that there are but seven possible operations which run through all of the applications.
8. Involution and evolution contrasted. Basing the work on formula tends to unify and basing it on blocks tends to segregate the work.
9. What attention shall be given to definitions and rules? Have we not gone to an extreme in dropping them out, which has greatly crippled our pupils in ability to reason?
10. What subject, if any, can be dropped from the ordinary arithmetic?

ENGLISH GRAMMAR.

Observations as to the Teaching.—The institute must devote much attention to this subject, as it is the basis of much of the present-day school work commonly undertaken in public schools. The teacher who is deficient in a systematic knowledge of English grammar will not succeed in any line of English teaching, and it is, therefore, important to emphasize it in the annual institute. The outlines here given are in a form and of a kind that any progressive teacher can prepare himself for rapid progress in the institute if he will acquire the technical knowledge in each topic here considered under the general head. These different grades of work are here offered, it being left to the discretion of the conductor of the institute what lessons should be selected for particular emphasis and exemplification. For a series of lessons in methods for a ten days' course, a selection from the whole series is easily made.

ENGLISH GRAMMAR.

FIRST YEAR.

Lesson I.—The sentence.

1. Classes.
 - a. Form. Simple, complex and compound.
2. Meaning.
 - a. Declarative. b. Interrogative.
 - c. Imperative. d. Exclamatory.
3. Elements of the sentence.
Subject, predicate, complement.
4. Give outline of sentence and show relation of its parts.

Lesson II.—Subject and predicate.

1. Subject of the sentence may be:
 - a. Noun. b. Pronoun. c. Infinitive. d. Participle. e. Prepositional phrase. f. Noun clause.Form sentences containing each.
2. Predicate.
 - a. Verb—run, go, etc.
 - b. Verb phrase—has been running, might be going, etc.

Lesson III.—Complement.

1. Definition of general term.
2. Kinds.
3. Different terms for same thing.
4. Used with what verbs.

Lesson IV.—Object complement.

1. Definition.
2. Tests for object complement.
 - a. Verb expresses action.
 - b. Object is affected by the act.
 - c. Object may become the subject, if the verb is changed to the passive voice.
3. Give ten sentences containing objects and apply the tests.

Lesson V.—Kinds of object complements.

- a. Noun. b. Pronoun. c. Infinitive. d. Participle. e. Noun clause.

1. Give sentences containing each, and explain.

Lesson VI.—Analysis of sentences.

- a. God tempers the wind to the shorn lamb.
- b. Every stalk, bud, flower and seed displays a figure, a proportion, a harmony beyond the reach of art.
- c. Give other examples as required.

NOTE.—Great care should be taken in the analysis of all sentences. Give the base of the sentence, consisting of the subject, verb and complement, without modifiers, first, then give all modifiers of the subject, and their modifiers, if any, next, the modifiers of the verb, and lastly, of the complement. *Do not diagram.*

Lesson VII.—Subjective or attribute complement.

1. Definition.

Tests.

- a. Kind of verb.
- b. When noun element, same as the subject.
- c. When adjective element, modifies the subject.

2. Give sentences and apply the tests.

3. Kinds of subjective complements.

- a. Noun. b. Pronoun. c. Participle. d. Infinitive. e. Prepositional phrase. f. Noun clause.

Give sentences to illustrate the above uses.

Lesson VIII.—Analysis of sentences.

- a. The old foreigner's little daughter was ignorant.
- b. She seemed in good health.
- c. She never felt at home in that place.
- d. Give other sentences as required.

Lesson IX.—Objective complement.

1. Definition.

2. How it differs from the object complement.

3. Tests.

- a. Follows the object complement in the sentence.
- b. Adds to or changes the assertion.
- c. When a noun element, it is the same as the object.
- d. When an adjective element, it modifies the object.

4. Give the sentences and apply tests.

5. Kinds of objective complements.

- a. Noun. b. Pronoun. c. Participle. d. Infinitive. e. Prepositional phrase.

Form sentences using each in a sentence.

Lesson X.—Analysis of sentences.

- a. He came to the throne as ruler at an early age.
- b. Vanity makes the whole world false.
- c. They found her in poor health.
- d. Give other examples as required.

Lesson XI.—Indirect objects.

1. Definition.

2. How they differ from prepositional phrases.

3. What they modify and why.

4. Verbs that take indirect objects.

Example: Allow, ask, bring, give, leave, make, offer, etc.

5. Form sentences containing indirect objects.

Example: Take *him* the book.

6. Adjectives and adverbs that take indirect objects.

Example: Like, unlike, near, nigh and opposite.

7. Form sentences containing indirect objects modifying these words
 - a. He is like his *father*.
 - b. They fought like brave *men*.

Lesson XII.—Adverbial objects or adverbial nouns.

1. Definition.
 2. How they differ from indirect objects.
 3. How they differ from prepositional phrases.
 4. What they modify and why.
 - a. Denote manner, extent, degree, etc.
- Example: The land is worth forty *dollars* an *acre*.

Lesson XIII.—Analysis of sentences.

- a. She brought him the petition three times that day.
 - b. The room is 20 feet long, 15 feet wide and 10 feet in height.
- Give other sentences for analysis.

Lesson XIV.—1. Possessive modifiers.

2. Appositive noun.
3. Adverb of position, or expletive.
4. Nouns used independently.

Lesson XV.—Prepositional phrase.

1. Form.
 - a. Simple. b. Complex. c. Compound.
2. Uses.
 - a. Adjective. b. Adverbial. c. Noun.
3. Noun uses.
 - a. Subject. b. Subjective complement. c. Objective complement.
4. Form sentences from the above and explain fully.

Lesson XVI.—Basis of a prepositional phrase.

- a. Noun—This is the city of *Chicago*.
- b. Pronoun—This is for *you*.
- c. Phrase—The Indians fired from *behind the tree*.
- d. Clause—I am surprised at *what you say*.

1. Give other examples and explain fully.

Lesson XVII.—Analysis of sentences.

- a. The senate of the United States shall be composed of two senators from each state, chosen by the legislature thereof, for six years.
- b. He staid there at least two years too long for his own good.
- c. It is certainly worth a long, hard tramp to the foot of the mountain, and the two-mile climb to its summit—this grand view over land and sea.
- d. The control of such a boy, ten hours out of the twenty-four, became every day a greater puzzle.

Lessons XVIII and XIX.—Read "Snow Bound" and analyze parts that are suited to the work.

Lesson XX.—Review.

ENGLISH GRAMMAR.

SECOND YEAR.

Lesson I.—Verbals.

Classes.

1. According to form.
 - a. Regular. b. Irregular.
2. According to relation to object.
 - a. Transitive. b. Intransitive.

Properties.

1. Voice.
 - a. Active. b. Passive.
2. Form.
 - a. Infinitive. b. Participle.
3. Tense.
 - a. Infinitive form.
 1. Present tense. 2. Present perfect tense.
 - b. Participle form.
 1. Present. 2. Past. 3. Present perfect.

Lesson II.—1. Show how verbals are like verbs.

2. Show how verbals take complements.
3. Show how verbals are transitive or intransitive.
4. Give all forms of both participles and infinitives.

Lesson III.—Verbal phrases.

1. Participial phrase.
 2. Infinitive phrase.
 3. Uses of both participles and infinitives.
1. Noun uses.
 - a. Subject.
 - b. Object complement.
 - c. Subjective complement.
 - d. Appositive complement.
 - e. Object of preposition.

Lesson IV. 2. Adjective uses.

- a. Adjective modifier.
 - b. Subjective complement.
3. Adverbial use.
 - a. Adverbial modifier.
 4. Independent.

Lesson V.—Analysis of sentences.

- a. Expecting to return soon, I did not think of writing you.
 - b. What do you expect to gain by trying to defeat the measure?
 - c. A man trying to do his duty is a man to be admired.
 - d. Judging him from his appearance only is not giving him justice.
- Give other sentences.

Lesson VI.—Clauses.

1. Classes according to form.
 - a. Simple. b. Complex. c. Compound.
2. Give examples.
3. Classes according to use.
 - a. Noun. b. Adjective. c. Adverbial.
4. Examples of each.
5. Clauses as modifiers.
 - a. Show how they modify.

Lesson VII.—Adjective clause.

1. Use.
 - a. Adjective modifier.
2. Connectives used in adjective clauses.
 - a. Relative pronoun.
 - b. Relative adverb.
2. Bring out clearly the importance of the connective in the clause.
 - a. That it has two uses in the sentence—As a connective, and to fill some other office in the sentence.
4. Antecedent.

Lesson VIII.—Offices which the relative pronoun fills in the sentence.

- a. Subject.
The man *who* was here has gone.
- b. Object.
The man *whom* you saw, has gone.
- c. Subjective complement.
He is not the man *that* I thought he was.
- d. Possessive modifier.
He is a man *whose* integrity is spotless.
- e. Object of a preposition.
He is the man *whom* I referred to:

Lesson IX.—Use other sentences containing the connectives.

1. Use *as* and *but* as relative pronouns.
2. Show when they are relatives.
3. Show the use of the double relative *what*.

Lesson X.—Relative adverb.

Example: The place *where* they live is beautiful.

- a. Show its adverbial use.
- b. Explain its antecedent.
- c. Show that it is equivalent to a prepositional phrase whose base is a relative pronoun.
- d. Show the use of *whence*, *why* and *when* as relative adverbs.

Lesson XI.—Analysis of sentences.

- a. All that I dread is leaving you behind.
- b. I am monarch of all I survey.
- c. Such as are virtuous are happy.
- d. Tears, such as angels weep, burst forth.

Discuss the relative pronoun in these sentences, and give others as may be required.

Lesson XII.—Adverbial clause.

1. Use.
 - a. Adverbial modifier.
2. Connective.
 - a. Subordinate conjunction.
If you study, you will succeed.
 - b. Conjunctive adverb.
We will go when spring comes.
3. Show the difference between the subjunctive adverb and the relative adverb.

Lesson XIII.—Classes according to meaning.

- a. Time. b. Place. c. Manner. d. Degree. e. Cause. f. Condition. g. Concession.

1. Use clauses to illustrate the above classes and discuss the connective.

Lesson XIV.—Analysis of sentences.

- a. Authors, like coins, grow dear as they grow old.
- b. The stoical scheme of supplying our wants by lopping off our desires, is like cutting off our feet when we want shoes.
- c. As a man thinketh in his heart, so is he.

Lesson XV.—Noun clauses.

1. Uses.
 - a. Subject. b. Object complement. c. Subjective complement. d. Appositive. e. Object of preposition.
2. Form sentences and use clauses to illustrate the above uses.

Lesson XVI.—Connective in noun clauses.

- a. Subordinate conjunction.
That he will go, is known.
- b. Conjunctive pronoun.
We do not know who will go.
- c. Adjective.
We do not know which boy will go.
- d. Adverb.
We do not know when he will go.

1. Show clearly the difference between the conjunctive pronoun and the relative pronoun.
2. Discuss compound conjunctive pronouns.

Lesson XVII.—Abridged clauses.

1. Definition and explanation.
2. Difference between abridged clauses and other clauses.
3. Case of the subject in abridged clauses.
 - a. Nominative. b. Possessive. c. Objective.
4. Why is this true?
5. Predicate.
 - a. What kind?

Lesson XVIII.—Abridged clauses.

1. Noun-uses.

a. Subject.

His being absent caused the delay.

b. Objective complement.

We expect *him to be elected*.

c. Object of a preposition.

I did not think of *his being* there.

2. Adverbial use.

a. Adverbial modifier.

His being a foreigner, his family was protected.

3. Show the difference between abridged clauses and verbal phrases.

4. Why are there no connectives in abridged clauses?

5. In what cases may the subjective complement be?

Lessons XIX and XX.—Read "Thanatopsis" and analyze it. Pay special attention to clauses.

 ENGLISH GRAMMAR.

 THIRD AND FOURTH YEARS.

Lesson I.—Parts of speech.

1. Nouns.

a. Classes.

1. Proper.

2. Common.

a. Class.

b. Collective.

c. Abstract.

d. Mass.

e. Verbal.

3. Common nouns used as proper nouns.

4. Proper nouns used as common nouns.

5. Give examples of each.

Lesson II.—Pronouns.

1. Personal.

a. Simple.

b. Compound.

2. Relatives.

a. Who, which, what, that, but, and as, with compound forms of first four.

b. Their use in sentences.

c. Use of the double relative *what*.

Lesson III.—3. Interrogative.

a. Who, which and what with their declined forms.

4. Adjective.

a. This, that, all, none, many, etc.

5. Difference between adjective pronouns and pronominal adjectives.
6. Use of pronouns.
 - a. Use of *who*, *which* and *that*.
 - b. Use of *each*, *either*, *neither*, *none*, etc.

Lesson IV.—Properties of nouns and pronouns.

1. Gender.
 - a. Masculine. b. Feminine. c. Neuter. d. Common.
 1. Gender of collective nouns.
 2. How sex is distinguished.
 3. Give exercises for forming the gender of nouns.
2. Number.
 - a. Singular and plural.
 1. Give rules for forming plurals.
 2. Plurals of proper and compound nouns.
 3. Plurals of collective nouns.
 4. Plurals of foreign nouns.

Lesson V.—Case: Constructions.

1. Nominative.
 - a. Used in what ways in sentences.
2. Objective.
 - a. Used in what ways in sentences.
3. Possessive.
Use in the sentence.
4. Give lists of nouns and pronouns and form the possessive, singular and plural. Pay especial attention to the possessive of compound nouns.
5. Declension.
 - a. Nouns. b. Pronouns.

Lesson VI.—Verb.

1. Classes.
 - a. Form. Regular and irregular.
 - b. Use.
1. Relation to object.
 - a. Transitive. b. Intransitive.
2. Relation to subject.
 - a. Finite. b. Non-finite.

Lesson VII.—Transitive and intransitive verbs.

1. Meaning of transitive.
2. Why is it not well to define a transitive verb as one that takes an object?
3. Verbs that are transitive in one sentence and intransitive in another.
4. Distinguish *clearly* between intransitive verbs and verbs in the passive voice.

Lesson VIII.—Passive verb forms.

1. Tests for passive verb.
 - a. Same form of the verb *be* with the perfect participle.
 - b. The subject can be made the object in the active voice.
 - c. It can be followed by *by* and the name of the actor.
2. Give lists of passive verbs and apply the tests.

Lesson IX.—Verbs that have passive form but not passive voice.

- a. He *is fallen*.
- b. The melancholy days *are come*.

Give other examples and review the previous lesson.

Lesson X.—Passive verbs that take an object.

- a. He was offered the *money*.
We offered *him* the *money*.
- b. I was given a *knife*.
They gave *me* a *knife*.

NOTE.—Explain fully the active and passive voice from these examples and dispose of the words underlined.

Lesson XI.—The object of a preposition, made the subject of a verb in the passive voice, and the preposition combined with the verb.

- a. They *laughed at* him. (Intransitive.)
- b. He *was laughed at*. (Transitive passive.)

NOTE.—Give other examples and explain fully.

Lesson XII.—Passive verbs which take the subjective complements.

- a. He *is called* John.
They *called* him *John*.
- b. The man *was considered* *honest*.
They *considered* him *honest*.

NOTE.—Give other examples and dispose of the words underlined.

Lesson XIII.—The progressive form of the verb and some form of *be* followed by the present participle used as subjective complement.

- a. He *is deceiving* himself.
- b. The height of the mountain *is deceiving*.
- c. He *is playing* ball.
- d. His favorite sport *is playing* ball.

NOTE.—Many other examples should be given and forms should be thoroughly discussed.

Lesson XIV.—Passive form of the verb, and some form of *be* followed by the perfect participle.

- a. The building *was finished* yesterday.
- b. The interior of the building *was elegantly finished*.

NOTE.—Give other examples and explain the verb constructions. Lists of sentences can be found in "Outlines and Exercises in English Grammar," by Miss Nellie B. Wallbank.

Lesson XV.—Agreement of the verb with its subject.

1. Finite verb having two or more subjects joined by "or" or "nor," agrees with subject how?
2. Subjects emphatically distinguished agree how?
3. When one subject is affirmative and the other negative, the verb agrees how?
4. Use of either, neither, each, every, all, none, etc.
5. Use of the contraction "don't."

Lesson XVI.—Conjugation.

- a. In common form.
 - b. In progressive form.
 - c. In passive form.
1. Principal parts of verbs.

Lesson XVII.—Adjective and adverbs.

1. Adjective.
 - a. Descriptive.
 - b. Definitive.
2. Adverbs.
 - a. Time. b. Place. c. Manner. d. Degree.
3. Comparison of adjectives and adverbs.
4. Examples and sentences.
5. Use of phrase adverbs.

Lesson XVIII.—Prepositions.

1. Appropriate prepositions.
 - a. Use of among, between, beside, besides, in, into, etc.
 - b. Needless use of prepositions.
 - c. Omission of prepositions.
 - d. Compound prepositions.
 - e. Use in sentences.

Lesson XIX.—Conjunctions and interjections.

1. Conjunctions.
 - a. Co-ordinate.
 1. Copulative.
 2. Adversative.
 3. Alternative.
2. Subordinate.
 - a. Review work in C grade for connectives
3. Use of interjections.

Lesson XX.—Parsing.

Written and oral forms for all parts of speech.

ACADEMIC COURSE IN PHYSIOLOGY.

FIRST YEAR.

Lesson I.—The framework of the body.

1. Its protection and support.
2. Its utility in movements.
3. Names and location of
 - a. Bones of the upper limbs.
 - b. Bones of the lower limbs.
 - c. The bones of the pectoral and pelvic girdles.
 - d. The other bones of the trunk.
 - e. Bones of the cranium.
 - f. Bones of the face.

Lesson II.—Joints.

1. Classes of joints; each described and an example given.
2. All the necessary parts of a typical movable joint, named, and described, giving function of each part.
3. A specific joint representing each class described.
4. Joints discussed in relation to levers.
5. Other joints discussed as time may permit.

Lesson III.—The blood.

1. Its composition.
 - a. Corpuscles. Form, size, structure, composition, use and origin of the red and white corpuscles.
 - b. Plasma and serum, their composition and use.
2. Clotting of blood; cause, use. N. B.—Air does not cause blood to clot, although the presence of it may hasten clotting.
3. Hygiene of the blood.

Lesson IV.—The circulatory system.

1. The heart; position, shape, covering, parts, pulsations and causes of modification of the same, hygiene.
2. Arteries; structure, distribution, properties, the main branches of the aorta, the pulse.
3. The veins; structure, valves, return of blood to the heart.
4. Capillaries; structure, distribution. Comparative rate of blood flow in arteries, capillaries and veins.
5. Relation of nerves to blood vessels.

Lesson V.—Tissues.

1. Cartilage; kinds, structure, distribution, uses.
2. Connective tissue; structure, distribution, uses.
3. Tendons and ligaments; structure, uses.
4. Bony tissue; gross anatomy, histology of, composition, formation of, changes with age, hygiene.

Lesson VI.—Tissues continued.**1. Muscular tissue.**

- a. Striated muscle; structure, properties, microscopic appearance, relation of nerves to muscles, rigor mortis, hygiene.
- b. Plain muscular tissue; structure, properties, distribution.
- c. Cardiac muscular tissue; description, properties.

2. Adipose tissue; description, distribution, function.**Lesson VII.—Digestive organs.**

1. The teeth; names, parts, composition, use, hygiene.
2. Salivary glands; location, activity of.
3. Pharynx and esophagus; description of, swallowing.
4. Stomach; shape, size, coats, ends of, mechanical action of.
5. Small and large intestines; parts, structure, mechanical action of, appendicitis.

Lesson VIII.—Digestion.

1. Classes of food, object of digestion, waste and repair in the body, a proper diet.
2. Secretion, composition, properties and specific actions of each of the digestive secretions.
3. Organized and unorganized ferments.
4. Relation of microbes to digestion and indigestion.
5. Absorption and distribution of the different food substances.
6. The relation of fruits and other foods to digestion and especially constipation.
7. Hygienic cooking.

Lesson IX.—Pancreas, spleen and liver; position, external appearance, structure and function of each.**Lesson X.—Respiration.**

1. Course of the air in reaching the lungs.
2. Structure of the trachea, bronchi and lungs.
3. Action of the ribs and diaphragm in respiration and structure of the latter.
4. The relation of the pressure of the atmosphere to respiration.
5. The change of arterial to venous and venous to arterial blood.
6. Diffusion of gases and liquids.
7. Purpose of breathing. Ventilation.
8. Colds and consumption.

Lesson XI.—The larynx.

1. Each of its cartilages, named, located, described, and its function given.
2. Relation of the hyoid bone to the larynx.
3. Vocal cords; structure, attachments. Position when at rest and in use, methods of tightening.
4. Difference of the voices of men and women; change in boys.
5. The thyroid gland and goitre.

PHYSIOLOGY.

SECOND YEAR.

Lesson I.—The skin.

1. The epidermis; the two layers described. Functions of the skin.
2. The dermis; structure, papillæ, nerves, blood vessels.
3. Sweat glands; description, function, regulation of perspiration.
4. Ways by which the body loses heat.
5. A hair and hair follicle. Sebaceous glands. Causes of hair turning gray and of baldness.
6. Origin and growth of the nails.
7. Hygiene of bathing and rubbing the skin.

Lesson II.—The kidneys.

1. Position, shape, size, blood vessels, ureters.
2. Parts of the interior described, pelvis, medulla, cortex.
3. Structure and function of the tubules and malpighian capsules.
4. Importance of the kidneys in relation to waste-nitrogen, Bright's disease, diabetes.

Lesson III.—Touch and taste.

1. Parts of the body most and least sensitive to touch and reasons for this.
2. Nerve endings in the skin, tactile corpuscles.
3. Description of the tongue. Name, locate and describe the different kinds of papillæ on the tongue.
4. Varieties of taste, flavors.

Lesson IV.—The sense of smell.

1. Boundaries and lining of the nasal chambers.
2. The turbinate bones. Catarrh.
3. The olfactory nerves and branches.
4. Character and distribution of the more common microbes and their relation to fermentation and decay.
5. Contagious diseases, sanitation.

Lesson V.—The eye.

1. The orbits, lids, muscles and coats.
2. The refracting media located and described (cornea, aqueous humor, crystalline lens, vitreous humor).
3. Structure and function of the iris.
4. Character and properties of glass lenses.
5. Accommodation of the crystalline lens.
6. Structure and function of the retina. Yellow spot. Blind spot.
7. Short-sight, long-sight, presbyopia, astigmatism, cataract.
8. Hygiene of the eye.

Lesson VI.—The ear.

1. External ear, description and function of parts.

2. Middle ear, description and function of parts.
3. Internal ear, description and function of parts.
 - a. Semicircular canals, utricle, sacule.
 - b. The cochlea, shape, parts, canal of the cochlea, the bony ledge, the upper and lower chambers, the organ of corti, the hair cells.
 - c. Perilymph, endolymph, the oval and round windows.
4. The transmission of sound through the ear.

Lesson VII.—The brain.

1. Locate and describe its three principal parts and the membranes enclosing the brain.
2. The cerebrum, connection of hemispheres, connection with spinal bulb, paralysis, apoplexy, function.
3. Cerebellum, connection with spinal bulb, function.
4. Medulla oblongata or spinal bulb; origin of nerves in it, path of impulses, controls what functions of the body.
5. Distribution of the most important cranial nerves.

Lesson VIII.—The spinal cord and nerves.

1. Position, protection, structure and envelopes of the spinal cord.
2. Structure of a nerve, a nerve fiber, and nerve cells; their distribution and function.
3. Functions of the spinal cord. Character and function of the roots of the spinal nerves.
4. Reflex action, character and use.

Lesson IX.—Narcotics.

1. The effects of alcohol and tobacco on the various organs and functions of the body.
2. Delusions in regard to the effects of alcoholic drinks.
 - a. In regard to the endurance of strength, the endurance of heat or cold.
 - b. In regard to its increasing the temperature of the body. (The internal temperature of a man dead drunk may fall to 15 to 18 degrees below the normal.)
3. Substitutes for alcohol in medicine.

Most any intelligent physician can name a list of substitutes and give their virtues. Such physicians of national reputation, as Dr. N. S. Davis, of Chicago, and J. H. Kellogg, of Battle Creek sanitarium, do not use alcohol in their practice of medicine, claiming that the substitutes are more efficient and safer as to results.

COURSE IN METHODS OF TEACHING PHYSIOLOGY.

THIRD AND FOURTH YEARS.

Lesson I.—The general scope of the subject.

1. Ends to be secured from its study; hygiene, culture, discipline.
2. Reasons for pursuing the study from a thoroughly scientific standpoint.
 - a. Its relation to chemistry and physics.
 - b. The hygienic benefits to the individual.

c. Benefits to the community in the understanding and application of sanitary regulations.

d. Benefit from the habit of applying scientific laws.

Lesson II.—Demonstrations.

1. General. Materials to be secured from the butcher shop, from skeletons of calves, sheep, etc. The human skeleton. Call on the dentists and physicians for material.

2. Chemical. Oxidation (potassium on water), tests for an acid and an alkali, for starch, for carbon dioxide.

Lesson III.—Physical demonstrations.

1. Osmose with the egg. 2. Levers. 3. Spectrum. 4. Concave mirror. 5. Magnifying power of lenses of glass; from a beef eye. 6. Refraction from water.

Lesson IV.—Detailed description of the compound microscope and its use in demonstrations.

Lesson V.—Methods of dissecting an animal given in detail. The best way is to accompany the description by an actual dissection.

Lesson VI.—Demonstrations; with a hog or sheep's kidney; to show the structure and action of the valves in a beef heart; the interior of a cat's stomach; and the parts of a hock and knuckle joint of a beef. Illustrations by blackboard drawings. Charts.

Lesson VII.—Preparation of temporary mounts for microscopic demonstrations, human and frog's blood, striated muscle, a hair, yeast potato starch, circulation in the web of a frog's foot.

Lesson VIII.—Methods of teaching the effects of alcoholic stimulants.

1. Information in the text-books on physiology.
2. Quotations from such physicians of national reputation as N. S. Davis, of Chicago, and J. H. Kellogg, of Battle Creek, Mich.
3. Statistics from cities having tried both license and prohibition.
4. Statistics from penitentiaries, insane asylums, insurance companies, etc.
5. Results from government experiments at Clark university and elsewhere. See Popular Science Monthly, March and April numbers, 1897.
6. Experiment noting the effect of alcohol on the white of an egg.

Lesson IX.—Methods of recitation.

1. Topical. 2. Conversational. 3. Brief questions and answers. 4. Board work. 5. Teacher does most of the reciting.

It will be well to have a general discussion on these different methods. Methods of preparing the lesson.

Lesson X.—Points to be emphasized by the teacher.

The application of the principles of physiology to exercise, cooking, eating, drinking, sleeping, bathing, colds, contagious diseases.

UNITED STATES HISTORY.

In the institute history must be more method and the careful study of a few topics rather than that of an attempt to cover the entire subject. There are some things in history that should be known by teachers without any doubt—these should receive definite attention in the institute. There are many things in history that are interesting enough, but they are not of supreme importance, and hence should be subordinated and not placed on a par with events that are turning points in civilization and government. The institute is the place where stress must be placed upon great things that cause great consequences, thereby helping a teacher to differentiate the essential from the non-essential. The chief value of a reasonable use of the source method in history is that it compels the selection of important and great events, and demands also that sufficient attention be given to these, so that the student gets some conception of the depth and the breadth of the great characteristics that constitute the making and the developing of civilization. Two courses are here submitted—an academic course, where the students are seeking history knowledge and are particularly deficient in the power of studying history, and a method course, where they have acquired the power and now need specially modern methods of study and teaching.

ACADEMIC COURSE.

FIRST WEEK—FIVE LESSONS.

Lesson I.—*Explorations.*—Reasons for.

The problem of the age.

Trade with India.

Why was a new route needed?

What suggested sailing west?

Astronomical theories.

Maps before and after the discovery.

The influence of travelers' tales; the crusades, the fall of Constantinople.

Other influences.

Columbus.

Early life; training and experience; those who helped him; his first voyage; discovery of land; the "Indians" he found; his subsequent voyages; his character; his services to mankind; his reward.

Lesson II.—*Other explorers and the nations interested.*

The Cabots, Vespucci, Ponce de Leon, Balboa, Magellan, Cortez, De Ayllon, Verazzano, Cartier, Cabrillo, De Soto, Melendez, Drake, Gilbert, Raleigh, Champlain, Hudson, Marquette and Joliet, La Salle.

Results of explorations. Distribution of territory. The demarcation line. Why did England not follow up the Cabot voyages?

Why did Spain direct her attention to South America?

Why did the efforts of Spain decrease as the efforts of England increased?
 Was the discovery of Balboa equal in importance to that of Columbus?
 Fishing and fur trading. Missionary efforts. Three nations that
 obtained strong footholds in the new world.

Lesson III.—*Early settlements.*

Not permanent. Huguenots in Florida.

Raleigh in Virginia.

Permanent. Spanish at St. Augustine and Santa Fe.

French at Quebec.

Dutch in New Netherland.

Swedes in Delaware.

English at

Jamestown:

London Co.; colonists, class and character; John Smith; Relations
 with Indians; starving time; House of Burgesses; slavery.

Plymouth.

Religious differences in England.

Puritans, separatists.

The growth of the colony. Government. Relations with the Indians

Massachusetts Bay—Salem, Boston.

Maine—Pemaquid Point, Portland.

New Hampshire—Dover.

Rhode Island—Providence.

Roger Williams, Quakers, religious and political liberty.

Maryland—St. Mary's. Religious toleration.

Connecticut—Fundamental orders—Charter Oak.

Pennsylvania—Penn, the great law, great treaty.

The Carolinas—Huguenots. The grand model.

Georgia—Oglethorpe. Debtors. Silk culture.

Lesson IV.—*Wars before the Revolution.*

Indian troubles. The Pequot war. King Philip's war.

English vs. French and Indians.

King William's war. Eight years.

Schenectady, Haverhill, Port Royal.

Queen Anne's war. Eleven years.

Deerfield, Port Royal, Quebec.

King George's war. Four years.

Louisburg. Two results.

French and Indian war.

The French forts. Washington's errand.

Albany convention. Franklin's snake. Ft. Du Quesne, Arcadia

Louisburg, Quebec. Arcadian exiles. Settled by this war.

Lesson V.—*Life in the colonies.*

Agriculture, commerce, education, religion, society.

Life in New England; in middle group; in the south.

Political growth in ideas of { Union.
 { Independence.

SECOND WEEK—FIVE LESSONS.

Lesson I.—*Causes of the Revolution.*

Remote: Claims of England to arbitrary government over the colonies.

Influence of France.

Different views of land ownership.

Different views of representation.

English character.

Growth of independence.

Control of commerce.

Personality of the king.

Immediate.—Importation act, writs of assistance; stamp act, quartering act, new taxes, Boston massacre, tea party, port bill, congresses;

Adams, Otis, Patrick Henry, Franklin.

Lesson II.—*The war.*

Lexington and Concord. Why? The meaning of the battle? The shot heard round the world.

Ticonderoga—Ethan Allen.

Bunker Hill—"The country is safe."

Commanders: English, American.

Compare and contrast.

Authority during the struggle.

The declaration of independence.

Things that encouraged the colonists.

Men from abroad who helped us.

Aid from France—who procured it?

Financial problems; issue of money.

Battle and campaigns. Flag adopted.

End of the war. Why America won.

Lesson III.—*Attempts to form a government.*

Early efforts toward union.

State, colony, federation, confederation, nation, meaning of terms.

Articles of confederation. When and why?

Franklin's draft. Compare with the one chosen. Select weak points.

State sovereignty. Western lands.

The critical period. The ordinance of 1787. U. S. as a colonizing power.

The constitutional convention.

Time, place, call, members, powers.

The constitution—theories, authors, three great compromises. Ratification.

Lesson IV.—*After the war.*

Some problems: Finances, state jealousies, trade restrictions.

Shay's rebellion—cause, meaning.

Adoption of the constitution.

Political parties—federalist, anti-federalist, implied and express powers.

Setting up government.

Election, congress, inauguration.

Lesson V.—*The first ten years under the constitution.*

Forming a cabinet. National bank.

Whiskey insurrection (principles involved).

Indian wars. Capital established. New states. Cotton gin, other inventions.

Slavery. Foreign affairs, Jay's treaty, Washington's farewell address.

Election of 1796; issue, result.

Affairs with France. Alien and sedition laws. Death of Washington.

THIRD WEEK—1800-1850—FIVE LESSONS.!

Lesson I.—*Administrations.*

Elections, choice, party, principles.

New states admitted during the period.

Problems and compromises.

The tariff question—protective, revenue, advocates of each.

Clay.

Wars—briefly; Indian, 1812, Mexican.

New problems; Mormons, etc.]

Lewis and Clarke's expedition.

Lafayette's visit. Nullification.

Panic of 1837. Gold in California.

Emigration to the west.

Lesson II.—*Renewal of trouble with England.*

Embargo and non-intercourse acts.

Reopening of trade. Napoleon's trickery.

The Henry letters. Impressment.

Events of the war. Three results.

The era of good feeling.

Lesson III.—*Territorial expansion (to date).*

Western Lands—Ordinance of 1787.

Louisiana purchase, price. Why? Result?

Florida purchase, price. Why? Result?

The Monroe doctrine.

The Webster-Ashburton treaty.

Annexation of Texas.

Oregon boundary—Dr. Whitman.

Mexican conquests; Alaska.

Hawaii, West Indies, Philippines.

Lesson IV.—*National development.*

Commerce. Embargo, non-intercourse, tariffs, express companies, etc
Industry. Manufactures, discovery of silver and gold, use of coal and petroleum, etc.

Transportation. National road, canals, steamboat, railway, telegraph etc.

Education. Public schools, colleges, one-cent newspaper, literature.

Religion. Separation into northern and southern branches of the churches.

Lesson V.—*Slavery to 1850.*

Importation forbidden. Missouri compromise. The Liberator. Garrison, Phillips. Congress refuses to receive petitions. Discovery of gold. Trade questions in slavery. Extension to the west. The compromise of 1850.

Fugitive slave law. Underground railway.

FOURTH WEEK—1850-1900—FIVE LESSONS.**Lesson I.—Administrations.**

Elections, choice, party, principles.

New states admitted during this period.

Problems that have come with them.

Utah—polygamy.

Business panics, industrial expositions, internal improvements, labor organizations, the money question, tariff, important legislation.

Lesson II.—*The civil war.*

Causes—remote and immediate:

Slavery, Uncle Tom's cabin, Kansas, Nebraska bill, Dred Scott decision, John Brown, election of Lincoln, secession.

Events of war. Campaigns, battles.

Generals, confederate, union.

The theatre of war; invasion of the north; end of the war.

Cost of the war; meaning of the result.

Lesson III.—*After the war.*

Reconstruction: Proclamation of pardon; amendments to constitution, national debt, impeachment of Johnson, readmission of states to union. Carpet-baggers, Ku-Klux.

Spanish-American war.

Cause—Cuba—Maine, call for men, Dewey at Manila; destruction of Spanish fleets; San Juan hill, Rough Riders; end of war. War in Philippines. Why?

Lesson IV.—*A lesson on finance.*

Banks: National, state, wildcat.

Currency: Coin, mints, subtreasuries, free coinage, single standard, double standard, 16 to 1, inflation, greenbacks.

Revenue: For what? How raised?

Tariff: Trusts—combinations; influence on legislation.

Taxes: Direct, indirect, income.

Lesson V.—*A tying-up of loose ends.*

COURSE IN METHODS IN HISTORY.

TEN LESSONS.

1. The meaning of history.
 2. The purpose of history study: { The teacher's aim.
The student's aim.
 3. The mechanism—general.
Topics, texts, maps, charts, sources, etc.
 4. How to use maps.
 5. A lesson in the sources.
 6. Library work.
 7. History below the high school.
 8. Correlating history, literature, English.
 9. History as a school for the imagination.
 10. History as a school for the judgment.
-

CIVIL GOVERNMENT OF IOWA AND THE UNITED STATES.

TWENTY LESSONS.

1. Local government in Iowa.
The township and the municipality.
2. Local government in Iowa.
The county and its functions.
3. The state government—General view.
4. The functions of the executive department.
5. The functions of the legislative department.
6. The functions of the judicial department.
7. The public institutions of Iowa.
8. The fiscal transactions and expenditures.
9. Relations of the state to the general government.
10. Management of education in Iowa.
11. The United States constitution as a whole.
12. The president.
13. The house of representatives.
14. The senate.
15. The district and circuit courts.
16. The supreme court.
17. How are laws made?
18. Elections.
19. The territorial system.
20. The limitations of the union, and of the states.

NOTE.—The object of this work should be more to develop a larger interest in civic history and problems rather than to teach a host of isolated facts. The great danger of work in our schools concerning civil government is the possibility of giving large attention to the mutable things and not of differentiating them from the permanent things. The chief end of this class work in the institute is to pay large attention to determining what is permanent and unchangeable, and what is mutable and variable. There are serious abuses in this direction that should not be overlooked in teaching teachers.

GEOGRAPHY.

OBSERVATIONS ON METHODS OF TEACHING.

1. The aim in teaching geography should be to show the relation between the earth and the life it supports.
2. The end to be obtained is not an understanding of maps and books, but through these, an understanding of the out of doors.
3. The map is a symbol. Learn to use it as such—to call up the picture the same as you use the symbols cat, horse, home, etc.
4. Geography is a causal study and should be made the foundation for history and all literature that has a geographical complexion.
5. Every new scene in history should be prefaced by a geography lesson on that particular region. "Geography is a history memory." Good maps should be used.
6. Every reading lesson that pictures scenes in some particular locality should have the geography of that locality clearly pictured either before or during the reading.
7. In reading travels, maps should be made of the routes taken and the different climatic conditions noted with their consequent effects.
8. During the first four school years use the printed map very sparingly. Below the fifth grade guide the child in *making* maps, at the same time giving oral descriptions of the localities being represented. *Be sure that every map is functioned.*
9. In all grades use all the illustrative material available. Show pictures. Draw on blackboard before the children explaining conditions as you draw. Model in clay or sand. Make paper pulp maps—always thinking past the symbol to the real thing.

FIRST AND SECOND YEARS.

Lesson I.—Distribution of land and water.

Comparative area covered by each. Significance of this relation.

Relative position and size of each continent. Significance of this.

Lesson II.—Latitude and longitude.

Lessons III, IV, V.—Change of seasons.

Lessons VI, VII, VIII.—Describe drainage of each continent, locating principal mountain ranges and describing river systems.

Lesson IX, X.—Circulation of atmosphere.

Calm belts.

Low barometric areas at equator, latitude 60 degrees N. and S. and at poles.

Area of high pressure 30 degrees N. and S. latitude.

Effect of these areas on general circulation.

Locate trades, westerlies, polars.

Give general direction of wind of each belt and cause of direction.

Climatic conditions of calm belts. Name countries that these belts cross and give their effect upon the rainfall, vegetation, animal life, civilization and commerce of each.

Lessons XI, XII.—Give climatic conditions of trades. Name countries passed over by them.

Give effect on each country's rainfall. Show how vegetation depends on heat belt, drainage, rainfall. How animal life depends on vegetation and man on them all. Study each characteristic area under trades.

Why do they make deserts of some places and nurture the heaviest forests in others.

Lessons XIII, XIV, XV.—Study United States daily weather maps in connection with westerlies.

Locate countries under westerlies—review topography of each, giving direction of wind for each with consequent rainfall, vegetation, animal life, civilization, degree of culture, commercial centers, commercial routes, institutions, political and social centers.

Lesson XVI.—Storms.

Comparison of daily weather maps to note weather changes.

Cyclonic and anti-cyclonic areas.

Low and high pressure areas, origin of.

Explanation of movement of wind in storms.

Explanation of the rain.

Explanation of the temperature.

Hurricanes.

Typhoons.

Thunderstorms.

Tornadoes.

Lesson XVII.—General description of the ocean.

Relative size of ocean.

Importance of ocean.

Differences of temperature of ocean surfaces and ocean depth.

Topography of ocean floor—cables that have been laid.

Prospects for Pacific cables.

Life in ocean.

Lesson XVIII.—Movements of waters.

Tides.

Ocean currents.

Lesson XIX.—Shores.

Differences between lake and sea shores.

Form of coast.

Sea cliffs.

Beaches.

Rising coasts.

Sinking coasts.

Lesson XX.—Mountain making.

Causes.

Nature of mountains.

The destruction of mountains.

Volcanoes.

Vesuvius.

Hawaiian volcanoes.

Materials erupted.

Extinct volcanoes.

Distribution of volcanoes.

Earthquakes.

Geysers.

THIRD AND FOURTH YEARS.**Lesson I.—1. Appearances of surfaces within environment.**

Plains, hills, valleys, gullies, deltas, etc.

Springs, brooks, rivers, lakes, etc.

2. Forces which are acting within environment.Heat and cold: { Freezing.
 { Thawing.

Rain, snow, dew, frost, hail.

Lesson II.—Running water on or below surface—rivers, lakes and underground.

Wearing, building.

Wind.

Wearing, building.

Glaciers.

Wearing, building.

Life.

Vegetable.

Animal.

Man.

Lesson III.—3. Forms and forces beyond sense perception.

Continents, their relation with reference to each other.

North America.

South America.

Eurasia.

Africa.

Australia.

Islands.

Oceans, seas, gulfs and bays.

Lessons IV, V, VI.—Winds of the globe.

Belts, direction of wind in each. Cause of direction.

Nature of wind.

Rain gathering. Why?

Rain giving. Why?

Air pressure at

Thermal equator.

Horse latitudes.

Poles.

Climatic conditions of each belt	{	Wind.
		Rain.
		Temperature.

Monsoons.

Land and sea breezes.

Mountain and valley breezes.

Trace across each continent in each rain belt, locating and accounting for the heaviest rainfall, medium rainfall, light rainfall.

In each area, note the vegetation, the culture and occupation of the people.

Lesson VII.—Weather changes.

Comparison of weather maps.

Cyclonic and anti-cyclonic areas.

Causes—effects.

Lesson VIII.—Hurricanes (tropical cyclones).

Time and place of occurrence.

Causes, characteristics, effects.

Thunderstorms.

Tornadoes.

Lesson IX.—Dew, frost, fog, mist, rain, snow, hail, clouds.

Account for presence of each.

Account for absence of each.

Lesson X.—Movements of the ocean.

Ocean currents.

Causes—effects on each continent.

Lesson XI.—Tides. Causes.

Direction of waves.

Where high? Where low? Why?

Effects in bays? In river mouths? On points of land?

Lesson XII.—The land.

Form of earth. Cause.

Condition of interior.

Condition of crust.

Minerals of crust,	{	uses.
Rocks of crust,		

Lesson XIII.—Land erosion.

1. By water.

Rainfall.

Return of underground water to surface; springs, artesian wells.

Limestone caves.

- River action. (Field study.)
 - History of hills.
 - Shape of basin. Changing waterparting. Effect of tributaries in shaping basin. Source of water supply in river.
 - Geological action of river—mechanical, chemical.
 - Transporting power of river.
 - River bed—torrential track; valley track; plain track.
 - Vertical and lateral erosion.
- Lesson XIV.—River erosion on dry plateaus.
 - River erosion on wet plateaus.
 - Difference in shape of valley.
 - Cutting back—waterfalls.
 - Lowering bed to base level.
 - Course of river winding.
 - Flood plain; how formed?
 - Natural embankments of rivers on plains.
 - Islands in rivers.
 - Bars, banks, deltas.
 - Relation of rivers to lakes.
 - Use of river.
- Lesson XV.—Glacier action.
 - Valley glaciers.
 - The Greenland glacier.
 - Relation of glaciers to prevailing wind.
 - Glacial period.
 - Evidences of.
 - Extent of.
 - Effect of.
 - Relation to the industrial interests of a country.
- Lesson XVI.—Shore forms.
 - Differences between lake and sea shores.
 - Sea cliffs.
 - The beach.
 - Wave curved shores.
 - Rising coasts.
 - Sinking coasts.
 - Relation to good harbors.
 - Islands.
 - By deposition.
 - By upheaval.
 - By erosion.
- Lesson XVII.—Wind erosions.
 - Nature of material carried by wind.
 - Effect of wind in carving dry plateaus; wind worn cliffs.
 - Formation of sand dunes.
 - Conditions for; shape; relation to prevailing wind.
 - Use of dunes on coast.
 - Evil of migrating dunes.
 - Character of wind swept surface.
 - Relation of wind to seed distribution.
 - Relation of wind to distribution of animals.

Lesson XVIII.—Mountain making.

Location of mountains with reference to interior and coast of continents.

Location of oldest. (Lowest.)

Location of newest.

Sedimentary rock thickest in mountainous regions.

Mountains of elevation.

Mountains of circumdenudation.

Mountains of accumulation.

Volcanic action.

Volcanoes.

Lesson XIX.—Dependence of man on environment. Increase of this dependence with the advance of civilization.

Cradle-land of the Aryan people.

Cradle-lands of civilizations.

Egypt, China, Asia Minor, Greece.

PENMANSHIP.

Institute work in penmanship is difficult to conduct because of the requirements of the branch as to furniture and materials. Hence it is practically necessary to have the instructor in penmanship exemplify the method of doing the work, giving such interpretations and suggestions as are useful to public school teachers. Form studies need eye training more than muscular training; hence the teaching of this branch requires first the ability to see form and second the ability to execute it. The old analytic method of penmanship teaching has been retired and the method of seeing letters and words and sentences as wholes have taken its place. This accounts for the rapid rise of vertical writing and the decided change of method of teaching that all schools of penmanship have made.

TEN LESSONS.

In giving a series of ten lessons in methods of teaching penmanship, the following topics are suggested as important:

Lesson I.—Position.

While writing at the desk.

While writing at the blackboard.

Lesson II.—Movement.

Whole arm.

Finger.

Fore-arm.

Combined.

*This topic presumes a thorough description of each movement, their relative value in the public schools, and in what grades and under what conditions they should be taught.

Lesson III.—Materials.

1. Importance of having suitable material.

2. What desks, pens, penholders, paper, ink, etc., are best for the various grades?

3. Should the use of slates and pencils be discouraged?

Lesson IV.—The blackboard.

Teachers should be made to feel the importance of the aid afforded by the blackboard—

1. In teaching form.
2. In developing movement.
3. In forming habits of neatness.
4. In giving general instruction and criticism.

Lesson V.—Copy books.

1. Their use should be limited to lower grades.
2. Disadvantages growing out of their exclusive use.
3. Substitute copies written by teacher, using practice paper.

Lesson VI.—Rhythm in writing.

1. Relation of rhythm to movement as applied to writing.
2. Irregular, spasmodic movement produces irregular, ill-formed letters.
3. Secure rhythm of movement.
 - a. By use of counting.
 - b. By use of metronome.
 - c. By use of music.

Lesson VII.—The lesson plan.

This topic should show the need of special, as well as general, preparation by the teacher; the outlining of the work in advance; the logical sequence of lessons; the special practice of each lesson by teacher before presenting to class; seeking to find the common tendencies to error and how to overcome them.

Lesson VIII.—Sequence of letter forms.

1. From simple to complex.
2. Letters similar in form in consecutive order.
3. Try and perfect the letter before leaving it.
4. Practice more on small letters than on capitals.

Lesson IX.—Relation that should exist between the movement exercise and the letters given in any one lesson.**Lesson X.—Criticism.**

1. General, by teacher.
2. Individual, by teacher.
3. Self criticism by pupil.

Lesson XI.—Correlation.

1. Penmanship needs to be correlated with all branches requiring written work.
2. Careful work at all times when writing is being done, soon establishes correct habits of writing.

In an institute where academic work must be given, the lessons should be illustrative of the methods which the instructor would have put in practice by the teachers he is training.

Without taking materially from the time allotted for penmanship practice, the pupils may easily be led to see the applications of the principles of teaching (previously outlined) provided the instructor plans the work with this object in view.

ORTHOGRAPHY.

ELEMENTARY SOUNDS.

Lesson I.—Classification.

1. Vowels.
2. Subvowels.
3. Aspirates.

Lesson II.—Formation.

1. Labials.
2. Dentals.
3. Linguals.
4. Palatals.

Lesson III.—Combination.

1. Diphthongs.
2. Triphthongs.
3. Digraphs.
4. Trigraphs.

LETTERS.

Lesson IV.—Classification.

1. Vowels.
2. Consonants.

Lesson V.—Form and use.

1. Capitals.
2. Small letters.

Lesson VI.—Diacritical marking.

1. Names of marks.
2. Use and effect.

WORDS.

Lesson VII.—Syllabication.

1. Monosyllable.
2. Dissyllable.
3. Polysyllable.

Derivation.

1. Primitive.
2. Derivative.
3. Compound.

Lesson VIII.—Analysis.

1. Root or stem.
2. Prefixes.
3. Suffixes.

Lesson IX.—Pronunciation.

1. Articulation.
2. Accent.
3. Enunciation.
4. Use of dictionary.

Lesson X.—Spelling.

1. By sound.
2. By letter.
3. Orally.
4. By writing.
5. Rules.

NOTE.—Use all the spare time you may find in connection with each recitation for drill in the correct use of diacritical marks and the analysis of words.

 ALGEBRA.

 SUGGESTIONS CONCERNING TEACHING ALGEBRA.

The work in algebra in an institute should be in two grades—one beginning and one advanced. In twenty lessons the beginning class should cover fairly well, the work through simple equations with one unknown quantity. This supposes some previous knowledge of the subject. The advanced class ought to be able to take the essentials of the subject from simultaneous equations through quadratics.

It is not the province of the institute to take those who have no knowledge of the subject and give them such instruction as they would receive in the public schools. Institute members should come prepared to take such work as will be of most advantage to them in teaching the subject.

The outlines for academic work are quite full and will give a faithful student an opportunity to do very thorough work. Teachers who have never studied algebra at school and who need it for an examination should be urged to take it up as special work and be prepared by institute time to take up those portions which have been specially difficult.

The "Method" work is intended for advanced and special students.

 ACADEMIC COURSE—BEGINNING ALGEBRA.

Lesson I.—Number.

1. Compare arithmetic and algebra as to use of number.
Drill on simple problems in which algebraic symbols are used.
2. Positive and negative number.

Lesson II.—1. Definition of terms needed at this point. Let other definitions follow as needed during the course of the week.

2. Drill in fundamental operations with monomials, with special attention to signs. Ex. $(+2) \times (-3)$; $(+a) \times (-5)$ etc.

Lesson III.—Addition and subtraction of algebraic expressions.

1. Signs. 2. Parentheses. 3. Drill in use of algebraic expressions in addition and subtraction. An abundance of oral work.

Lesson IV.—Multiplication.

1. Signs. 2. Application of principles in well graded exercises. Introduce literal exponents.

Lesson V.—Powers.

1. Distinguish between $a^m a^n = a^m + n$ and $(a^m)^n = a^{mn}$.
2. Degree. Homogeneous expressions.
3. Drill work.

Lesson VI.—Division.

1. Signs. 2. Exercises. Work by inspection as far as possible.
Get into the habit of doing a great many exercises in a short time.

Lesson VII.—Drill in fundamental operations.

1. Special attention to rapid oral work.
2. Use literal exponents and such other combinations as will emphasize the wide range of algebraic number.

Lesson VIII.—Equations.

1. Classes. a. Identical. b. Conditional. c. Equivalent.
2. Principles for solving.
3. Exercises. Problems.

Lesson IX.—Type-forms in multiplication.

1. $(a \mp b)^2$. 2. $(a+b)(a-b)$. 3. $(x+a)(x+b)$. 4. $(ax+b)(cx+d)$. 5. $(a \mp b)^3$. 6. Binomial theorem.

Lesson X.—Type-forms in division.

1. Sums of like odd powers by sums of quantities.
2. Difference of like odd powers by difference of quantities.
3. Difference of like even powers by sum or difference of quantities.

Lesson XI.—Factors.

1. Removal of monomial factors.
2. Grouping terms to find common factor.

Lesson XII.—Factors.

1. Binomial expressions. Apply type-form previously learned.

Lesson XIII.—Factors.

1. Special devices.
2. Drill in proper classification of expressions to be factored.
Much attention should be given to this, as failure often lies right here.

Lesson XIV.—Following is a suggested outline for drill work:

1. Remove monomial factors.
2. If a binomial.
 - a. Sum of like odd powers.
 - b. Difference of like odd powers.
 - c. Difference of like even powers.
3. If a trinomial.
 - a. Square of sum or difference.
 - b. Cross products.
4. If more than these terms, group other factors according to above principles.

Lesson XV.—Factors.

1. H. C. F. and L. C. M. Do the work by inspection as far as possible.

Lesson XVI.—Fractions.

1. Laws of signs. 2. Reduction.

Lesson XVII.—Fractions.

1. Fundamental operations.

Lesson XVIII.—Fractions.

1. Complex fractions. 2. General drill.

Lesson XIX.—Fractional equations with special attention to signs and best methods of combination.**Lesson XX.—Problems with special drill on method and rapidity of statement.**

ACADEMIC COURSE—ADVANCED ALGEBRA.

Lesson I.—Review of fundamental operations.

Lesson II.—Review of factoring. See outlines for C and D grades.

Lesson III.—Simultaneous equations. (Take up definitions as needed in the course of the work.)

1. Method of elimination. 2. Drill work.

Lesson IV.—Problems on simultaneous equations with special attention to method and rapidity of statement.

Lesson V.—Problems.

Lesson VI.—Evolution.

1. Signs of roots.
2. Principles of roots.

$$(a) \sqrt[m]{a^n} = (\sqrt[m]{a})^n.$$

$$(b) \sqrt[m]{a^{mn}} = a^n.$$

$$(c) \sqrt[m]{ab} = \sqrt[m]{a} \times \sqrt[m]{b}.$$

$$(d) \sqrt[m]{\frac{a}{b}} = \frac{\sqrt[m]{a}}{\sqrt[m]{b}}.$$

$$(e) \sqrt[m]{\sqrt[n]{a}} = \sqrt[mn]{a}.$$

Lesson VII.—Square root of polynomials. Give special attention to finding of roots by inspection.

Lesson VIII.—Cube roots of polynomials.

Lesson IX.—Roots of arithmetical numbers with discussion of the application of algebraic formulæ to the arithmetical process.

Lesson X.—Surds.

1. Classes. 2. Reduction to simplest forms.

Lesson XI.—Surds.

1. Addition and subtraction.

Lesson XII.—Surds.

1. Reduction of surds of different orders to equivalent surds of the same order.
2. Multiplication.

Lesson XIII.—Surds.

1. Division, rationalization. 2. Square root of binomial surds.

Lesson XIV.—Imaginaries.

Lesson XV.—Quadratic equations.

1. Pure quadratics. 2. Affected quadratics. Completing square.

Lesson XVI.—Quadratic equations.

1. Solution by factoring. 2. Solution by general formula. Lay special emphasis upon the use of the formula in practice.

Lesson XVII.—Exercises in quadratics.

Lesson XVIII.—Simultaneous quadratics with special attention to classification.

Lesson XIX.—Simultaneous quadratics.

Lesson XX.—Problems involving quadratics.

TOPICS FOR LESSONS ON METHODS IN ALGEBRA.

NOTE.—When the subject matter in algebra is not of first consideration with the class, the following course of ten lessons is regarded as a proper treatment:

Lesson I.—Number in arithmetic and in algebra.

1. A comparison with a view to giving an insight into the wide range of algebraic number.
2. How develop the idea of positive and negative number?

Lesson II.—The fundamental operations.

1. The use of signs. 2. How develop speed and accuracy. 3. The early use of literal exponents. 4. Zero.

Lesson III.—The equation.

1. When presented. 2. Methods. 3. Problems involving its use.

Lesson IV.—Type-forms.

1. In multiplication. 2. In division.

Lesson V.—Factors.

1. Importance of this subject.
2. Necessity of drill in classifying expressions to be factored.

Lesson VI.—Fractions.

1. Signs. 2. A drill in use of factors.

Lesson VII.—Simultaneous equations.

1. Equivalent systems. 2. Need for more drill on choice of method of elimination.

Lesson VIII.—Surds.

1. Importance of subject. 2. Methods of teaching.

Lesson IX.—Quadratic equations.

1. Completing square. 2. Solution by factoring. 3. Solution by general formula. Emphasize value of last method.

Lesson X.—General discussion. "A plea for a more scientific treatment of the subject of algebra."

ELEMENTARY PHYSICS—APPLIED COURSE.

AS A MEANS TO INSTRUCTION IN METHODS TO ENCOURAGE ADVANCED STUDY OF THE SUBJECT.

Lesson I.—Fundamental conceptions of physics: Matter, force, motion, energy, work and power.

Lesson II.—Force of gravitation:

1. Discussion of principles; Newton's law. Effect on bodies free to move. Variation in the intensity above and below the earth's surface. Simple experiments for determining the center of gravity.
2. Application. Falling bodies.

Lesson III.—Physics of the solar system.

1. Discussion of principles. Newton's law of motion. Gravitation. Centrifugal force.
2. Application. The earth.

Lesson IV.—Physics of the atmosphere.

1. Discussion of principles. Atmospheric pressure. Torrecelli's experiment. Simple air-pump experiments.

Application. Barometer. Common pump. Syphon.

Lesson V.—Physics of atmospheric phenomena.

1. Discussion of principles. Effect of heat on the atmosphere. Convection. Evaporation. Condensation. Latent heat. Humidity. Dew-point.

2. Application. Winds. Clouds. Dew. Climatic effects.

Lesson VI.—Physics of the ocean.

1. Discussion of principles. Pascal's law. Pressure due to gravity. Convection. Specific heat of water.
2. Application. Ocean currents.

Lesson VII.—Atmospheric electricity.

1. Discussion of principles. Production and explanation of static charges of electricity. Principle of induction. Simple pith ball experiments.

2. Application. Lightning. Aurora borealis.

Lesson VIII.—Physics of the rainbow.

1. Discussion of principles. Nature of light. Reflection of light. Refraction of light. Dispersion of light. Simple experiments illustrating these principles.

2. Application. Raindrop.

Lesson IX.—1. Function of a theory in physics.

2. Undulatory theory. Light radiations. Heat radiations. Electrical radiations.

Lesson X.—1. Physical principles of recent great discoveries.

2. Roentgen rays. Wireless telegraphy. Liquefied air.

ELEMENTARY PHYSICS—ACADEMIC COURSE.

- Lesson I.—1. Scope of physics. 2. Kinds of matter; solids and fluids. 3. Molecular theory of matter.
- Lesson II.—Important properties of matter. 1. Extension; units of measurement. 2. Weight. 3. Mass, units of measurement. 4. Elasticity. 5. Inertia.
- Lesson III.—Molecular phenomena. 1. Cohesion. 2. Adhesion. 3. Crystallization. 4. Surface tension. 5. Capillarity.
- Lesson IV.—Motion. 1. Uniform. 2. Accelerated. 3. composition and resolution of velocities.
- Lesson V.—Fundamental conceptions of mechanics. 1. Force. 2. Energy. 3. Work and power.
- Lesson VI.—Newton's laws of motion. 1. First law is the property of inertia restated. 2. Second law suggests definition of force in terms of momentum. 3. Common illustrations of third law.
- Lesson VII.—Fluids. 1. Pascal's law. 2. Pressure due to gravity. 3. Atmospheric pressure. 4. Barometer.
- Lesson VIII.—Density. 1. Solids heavier than water. 2. Solids lighter than water. 3. Liquids. 4. Specific gravity defined.
- Lesson IX.—Heat. 1. Kinetic theory. 2. Temperature. 3. Kinds of thermometers.
- Lesson X.—Methods of distributing heat. 1. Conduction. 2. Convection. 3. Radiation.
- Lesson XI.—1. Specific heat. 2. Method of determining by means of mixture. 3. Sensible heat. 4. Latent heat.
- Lesson XII.—Static electricity. 1. Production of electrification. 2. Kinds; positive and negative. 3. Simple law stated. 4. Principle of induction.
- Lesson XIII.—Simple voltaic cell. 1. Chemical action explained. 2. Its defects; polarization and cross currents due to zinc impurities. 3. Remedies for defects.
- Lesson XIV.—Induced currents. 1. Methods of inducing. 2. Induction coil.
- Lesson XV.—Dynamo. 1. Essential parts; field magnets; armature and commutator. 3. What determines the value of the E. M. F. generated?
- Lesson XVI.—1. Sound vibrations and sound waves. 2. Longitudinal and transverse waves.
- Lesson XVII.—Velocity of sound. 1. How determined? 2. Effect of temperature. 3. Effect of elasticity and density of medium.
- Lesson XVIII.—1. Vibrations of strings. 2. Properties of a musical sound; intensity, pitch and loudness.
- Lesson XIX.—Undulatory theory of light. 2. Reflection of light. 3. Images of plane and concave mirrors.
- Lesson XX.—1. Refraction of light. 2. Images of lenses. 3. Dispersion of light.

ELEMENTARY ECONOMICS.

The elements of the science can be best understood and the foundation laid for effective work in the subject, by calling attention to economic forces as they appear in geography and history. In arithmetic, tracing the development of our system of denominate numbers will show the approximation toward exactness of quantitative elements as enlarging trade made it necessary; percentage will furnish forms of credit and modes of handling it. The different denominations of coin and paper money should be handled and inspected. Market reports, trade balances and bank statements should be noticed and discussed. The development of new resources; the establishment of new industries; the introduction of new cereals and fruits; important shipments of goods should receive attention, and their causes and effects should be carefully traced out. Such foundation work, introduced in its proper connection, will enlarge the student's fund of practical information, and prepare him to make rapid and intelligent progress when the work in economics is entered upon formally.

BRIEF COURSE.

- Lesson I.—Scope of science. Limits. From examination of many forms of wealth under varying conditions of men and environment, develop meaning of terms value, utility, commodity, wants, labor, land, capital, etc.
- Lesson II.—Divisions of subject. Follow wealth in its life history of production and its conditions; exchange, its instruments; distribution, its parts and claimants; consumption, its kinds. Show how desire in the form of demand, determines kind and direction of economic forces.
- Lesson III.—Production. Discuss wants as rising out of man's nature, impelling him to work toward their satisfaction. Land and capital necessary to aid him. Time, place, and form as affecting value. Machinery and invention as aids. Limitation and exhaustion of land.
- Lesson IV.—Money. Explain origin of barter; its difficulties; standard of trade leading to money; credit as developing from money and giving rise to banks, and methods of handling credit.
- Lesson V.—Distribution. Why men unite in production; problem of dividing product; contests between capital and labor and schemes to avoid them.
- Lesson VI.—Consumption. What shall be done with wealth. How best used. How use affects future production. Increasing wants and wealth of civilization.
- Lesson VII.—Logical method. Men follow line of least sacrifice to satisfy their wants; forecast economic tendencies from given conditions adaptation of man to nature and nature to man, and economic effects.

Lesson VIII.—Relation to geography. Men differing in powers and tendencies and varying soil and climate; show direction of production and trade currents.

Lesson IX.—Relation to history. Follow growth of population, migration, internal improvements, money system, slavery, tariffs as they develop in the history of the country.

Lesson X.—Stimulating interest in present economic problems by use of newspaper and magazine discussion and party issues. Methods 8, 9 and 10 may be used without a text-book.

The following lessons are intended to develop the fundamental ideas of the subject in their logical order. Abstract terms such as value and utility should be reached through a careful induction. Common words used in a technical sense, such as land, rent and distribution, must be closely held within their new bounds until their scientific meaning becomes well fixed in mind. It will be found that a clear understanding of the manner of doing a certain kind of business is the proper basis for its economic treatment. This is especially applicable to younger pupils. Debates as to commercial policies and the discussion of trade conditions as gleaned from the newspapers and magazines, will help to maintain a living interest in economic questions. In such discussions, the teacher should remember that she is to be an expositor, not a partisan.

ADVANCED COURSE.

Lesson I.—*Economics*. Definition; limits; aims; purposes of teaching; divisions of subject.

Lesson II.—*Wealth*. The social organism; rise of wants; kinds of wealth.

Lesson III.—*Value*. Essentials; utility; transferability; difficulty of replacement; kinds of value; not material; price.

Lesson IV.—*Production*. Requisites; direction of; habits of men; soil and climate.

Lesson V.—*Land*. As resource; as agent; amount of; grade; value; ownership; law of diminishing returns.

Lesson VI.—*Labor*. Kinds; effective conditions; skill and muscle; inertia of; division of; its advantages and dangers.

Lesson VII.—*Capital*. How arising; law of; kinds; direction of use.

Lesson VIII.—*Money*. Functions of; how rising from barter; coin; kinds; coinage and market ratios; bimetallicism; mints; mutilated coins.

Lesson IX.—*Paper money*. Kinds in United States; origin of; how kept at parity; regulation of volume; fiat money.

Lesson X.—*Credit*. Origin; forms of; amount; advantages; panics.

Lesson XI.—*Banks*. Functions of; kinds; uses; regulation of; national banking system.

Lesson XII.—*Cost of production*. Elements determining normal value; market value; surplus; demand and supply as affecting production.

Lesson XIII.—*Rent*. Theory of; amount; no rent lands; relation to population and wages.

Lesson XIV.—*Interest*. Right to; fixing rate; new and old countries; usury.

Lesson XV.—*Profits*. How arising; amount of; relation to rent and wages; co-operation and profit sharing.

Lesson XVI.—*Wages*. Kinds; rate, how determined; as affected by invention and immigration; improving labor; labor unions; strikers.

Lesson XVII.—*Taxation*. Extent of government's right; kinds; how levied, collected and used.

Lesson XVIII.—*Protection and free trade*. Define protective tariff; tariff for revenue and free trade; arguments for and against each.

Lesson XIX.—*Socialism*. Theory of individual ownership; state control of corporations; municipal and state ownership; nationalization of land; the unearned increment.

Lesson XX.—*Consumption*. Kinds; population and food supply; reaction upon production; wastes of society.

OUTLINE FOR VOCAL MUSIC.

As the majority of students in most institutes have paid little attention to technical music it is necessary to commence at the very beginning of the subject and proceed gradually. Considering the conditions to be met it seems best to give quite detailed directions in this outline for carrying on the elementary work.

Lesson I.—The scale.

The first thing necessary in learning to read music is to master the scale. The tones of the scale differ from one another in their characteristics as radically as people do.

Do is the foundation tone—the home tone. It is characterized by strength.

Re is full of promise, life and courage. It is the optimistic tone.

Mi is quiet, soothing and restful. It is the lullaby tone.

Fa is grand, awe inspiring, infinite. It is called the cathedral tone, or organ tone.

Sol is bright, rousing, triumphant.

La is plaintive, sad. It is called the weeping tone.

- Si is sensitive, incomplete. It reaches up to Do.

To feel and express these differences is to make a good start toward artistic singing.

- It is an excellent scheme for scale drill to place pictures on the black-board representing these different tones; then by pointing to them have the pupils sing the corresponding tones:

[A house may stand for the home note, Do.

A rainbow for Re.

A cradle for Mi.

A cathedral for Fa.

A trumpet for Sol.

A weeping willow for La.

A baby reaching up to its mother for Si.

- There should also be a diagram of the major scale put on the board in the form of a ladder with the syllables Do, Re, Mi, etc. written on the rounds. A spirited drill in skips in the scale should be conducted from this for a few minutes at every session till great skill is acquired.

- The following are some of the devices that may be used, the teacher indicating with the pointer the notes to be sung. Every exercise should end on Do. The prime mark after Do (Do') indicates that upper Do is to be sung:

Do, Mi, Sol, Mi (three times).

Do', Sol, Mi, Sol (three times).

Do, Fa, La, Fa (three times).

Do', La, Fa, La (three times).

Do, Mi, Sol, Mi, Do, Fa, La, Fa (three times).

Do', Sol, Mi, Sol, Do', La, Fa, La (three times).

Do, Re, Do, Mi, Do, Fa, Do, Sol, Do, La, Do, Si, Do', Do.

Do, Re, Do, Re, Mi, Re, Mi, Fa, Mi, Fa, Sol, Fa, Sol, La, Sol, La, Si, La, Si, Do'.

Do', La, Si, Do', Sol, La, Si, Fa, Sol, La, Mi, Fa, Sol, Re, Mi, Fa, Do.

Lesson II.—Staffs.

Draw eleven horizontal lines equal distances apart. Call the middle one middle C. Place the soprano clef on the upper five; the bass clef on the lower five. This shows clearly the relation between the bass and the soprano staffs. Learn thoroughly the location of the letters on both staffs.

Lesson III.—Notes and rests.

Write all the different kinds of notes from the whole note to the thirty-second note in a horizontal line with the corresponding rests directly under them.

Explain the dotted note and triplets.

Lesson IV.—Time.

Illustrate by diagram one measure of each of the different kinds of time in common use and mark the accented beats.

Explain time signatures.

In beating time with the hand, there are but three different movements to learn—"down up" for double time, "down left up" for triple time, and "down left right up" for quadruple time. In learning a song in 6-8 time it is well to beat down left up, down left up—six beats for each measure—but later, when perfect rhythm is desired, there should be but two beats in a measure. It is generally conceded that the best method for mastering rhythm is to beat the time with the hand. There are other devices, however, that should be used. In 2-4 time the following list of words will be helpful: For two quarter notes say the word "master," for four eighth notes say the words "lady teacher," for a quarter note followed by two eighth notes say "girl pupil," for two eighth notes followed by a quarter note say "holiday," for a quarter note followed by a quarter rest say "school." By placing these different groups of notes on the board and having pupils say the corresponding words as the teacher indicates, the sense of rhythm will be cultivated and an easy tripping movement secured. These words may also be used in connection with exercises in the book or chart.

Lesson V.—Keys.

If it is desired to explain clearly the use of sharps and flats in the various keys, a diagram of the keyboard of an organ showing where the half steps occur, also a diagram of the scale indicating the half steps, will be of good service.

By experiment the student can discover what sharps or flats are used in each of the fifteen keys and can see where to place them in the signature. If time is too limited for this, some arbitrary scheme may be devised for finding Do in the different keys.

Lesson VI.—Use of pitch pipe.

To find the pitch for Do in the different keys by the use of a "C" pitch pipe, the following scheme is used:

- To find Do in the key of G, call the pitch pipe tone Do, sing down to Sol, call that Do.
- To find Do in the key of D, call the pitch pipe tone Do, sing down to Re, call that Do.
- To find Do in the key of A, call the pitch pipe tone Do, sing down to La, call that Do.
- To find Do in the key of E, call the pitch pipe tone Do, sing down to Mi call that Do.
- To find Do in the key of B, call the pitch pipe tone Do, sing down to Si, call that Do.
- To find Do in the key of F, call the pitch pipe tone Sol, sing down to Do.
- To find Do in the key of B flat, call the pitch pipe tone Re, sing down to Do.
- To find Do in the key of E flat, call the pitch pipe tone La, sing down to Do.
- To find Do in the key of A flat, call the pitch pipe tone Mi, sing down to Do.
- To find Do in the key of D flat, call the pitch pipe tone Si, sing down to Do.

Lesson VII.—Blackboard exercises.

It is not enough merely to understand the elements of music, the student must be thoroughly familiar with them. To this end blackboard exercises are used. A time limit is placed upon them to secure skill. It also adds interest to the work, and interest is of prime importance in music.

1. Write the notes and rests (30 seconds).
2. Diagram the major scale and locate the syllables Do, Re, Mi, etc. (30 seconds).
3. Write the key letters for the fifteen keys in the form of a circle, placing C at the top (30 seconds).
4. Write the seven sharps on the soprano staff as they are arranged in the signature of C sharp, and the seven flats as they are arranged in the signature of C flat (30 seconds).
5. Diagram the bass and the soprano staff, connecting them with middle C, and write the letters on the lines and spaces including the second added line above the soprano staff and the second added line below the bass staff (60 seconds).
6. Diagram an octave of the keyboard and name all the keys, flats and sharps included.

Lesson VIII.—Sight singing.

Reading notes by means of the syllables Do, Re, Mi, etc. is the work that should receive most attention in institutes. Mastery of the scale and freedom in beating time with the hand are the conditions for success here.

Lesson IX.—Character of music used.

The songs that are sung in institutes should be of the very best. The same care should be used in selecting them that is shown in selecting literature. In literature only what is known to be of real merit is ever introduced into the schools, while in music some of the song books used are full of senseless jingles that have no musical merit whatever. A few good songs well sung will have a telling effect in enlisting the interest of students in music.

SPECIAL WORK FOR PRIMARY TEACHERS.

OUTLINE OF WORK SUGGESTED AS SUITABLE FOR INSTITUTE INSTRUCTORS.

It is conceded that there must be a differentiation as to primary teachers' work at institutes. To assist as much as possible in determining what topics and what lines can be made most practical and most helpful to such special teachers, the following brief outline is given. This is, however, more suggestive than determinative, because every institute class of primary teachers will have particular needs and hence should have instruction to fit those needs. It is believed that these suggestive outlines will indicate what is to-day the more important features of primary school work that need harmonizing in the thinking and the applying of the vast majority of primary teachers who will attend the normal institute.

I.—*The child.*

1. The instinct of activity.
2. The kindergarten.
 - a. Aims and methods.
3. Children's rights.
4. The instinct of investigation.
5. The training of the senses.

a. Illustration lessons: {
6. The training of the emotions.
 - a. Children's toys.
 - b. Children's plays.
 - c. Value of stories, songs and games.
7. The training of the affections.
8. The instinct of continuity.
9. The training of the reason.
10. How shall we govern the children?
 - a. Punishments.

Right and wrong.
11. The training of the will.
12. Reference books for teachers.
 - a. Kindergarten magazines. Child Study Monthly.
 - b. Child nature. Children's rights. First school year.

II.—*Primary reading.*

1. Ultimate purpose in reading: {

Inspiration.
 Knowledge.
 Pleasure.

2. What shall children read?
3. The value of classic literature.
 - a. To the teacher.
 - b. To the pupil.
4. Methods.
 - a. Sentences: { Action.
Nature.
Hiawatha, etc.
5. Phonic synthesis.
6. Eclectic.
 - a. The above methods fully illustrated.
7. Ends sought in primary reading.
 - a. To make beginners quick in the recognition of words and sentences.
 - b. To secure interest in the content.
8. Training in silent reading.
9. Training in oral reading.
10. Value of the mechanics of reading.
11. Character and use of supplementary matter.
12. Reading as a center of correlation.
13. Oral presentations of such stories as—
 - "Mother Nature's Party,"
 - "The Unhappy Pine,"
 - "History of a Waterdrop," etc.
 - a. First for reproductions by pupils.
 - b. Second for reading matter later.
 - c. Results of the first year's work.
 1. First Steps for Little Folks.
 2. Cyr's First Reader.
 3. Nature's Byways.
 4. Hiawatha Primer, etc.

III.—*Primary language training.*

Purpose.

1. To quicken the ideas children possess and to give them an opportunity to acquire new ideas.
2. To lead children to express their thoughts fluently and naturally.
3. To secure correctness of speech.

Aims—how realized.

1. Conversation lessons on topics of interest to children.
 2. Stories.
 - a. Requirements of a good story.
 1. Childlike, simple and full of fancy.
 2. Instructive and of permanent value.
 3. Should call out a moral judgment.
 3. The teacher should acquire a vivid, sympathetic and interesting style in the story work.
 4. The children should be encouraged to picture and to tell the story. Drill is of course necessary.
- History, nature study and geography will furnish a wealth of material for this line of work.

5. Choice poems should be committed to memory:
 "Only the best are good enough."
 Helen H. Jackson, Celia Thaxter, The Cary Sisters, Longfellow,
 Field and the kindergarten writers will supply teachers with
 suitable material.
6. Language training during the first years of a child's school life
 must be patient, persistent and progressive. (An endless amount
 of oral work should precede written work.)
7. When the pupils have acquired sufficient freedom in the mechanics
 of writing and considerable readiness in oral expression, they
 are ready for written work.
8. Correctness of form and expression must be insisted upon.
9. Letter writing, business forms, biographies and nature lessons may
 all be utilized in the written exercises in the intermediate grade.
10. Word study, sentence building, dictation exercises and sight work
 will lead to fluency and correctness of expression.

Language books for teachers:

Miss Cooley's series,
 Southworth and Goddard,
 O. T. Bright, etc.

IV.—*Primary geography.*

Aims.

1. To correlate in the child's mind concepts which he has already
 acquired.
2. To construct the child's images of the earth's modifications and
 man's relations thereto. The nature study work of the first and
 second grades may be considered the beginning of geography.

Oral geography lessons on the following topics:

1. Field lessons will furnish an excellent opportunity for collecting
 specimens and observing forms of land and water near the school.
2. Food, clothing and shelter will take the children to the three great
 kingdoms—animal, mineral and vegetable.
3. "What we saw at a grocery store" will furnish material for a series
 of interesting lessons—salt, sugar, coffee, fruits, etc.
4. "A weather record" will lead pupils to observe wind, sun, frost,
 sky, etc.
5. Occupations of the people will lead to a realization of the depend-
 ency of one geographical feature upon another.
6. Evaporation, water erosion, the results of freezing on rocks and soil
 may be observed by pupils in every locality.
7. Stories of industry will lead pupils to see the dependence of manu-
 facture upon water power and coal supply; of commerce upon
 coast indentation; of agriculture upon soil and climate; of the
 growth of our great cities upon a combination of these.
8. Before taking a text-book in geography, the pupils should become
 acquainted with "Seven Little Sisters," "Each and All," "Ten
 Boys," "Friends in Feathers and Fur," "Mother Nature's
 Stories," etc. They should be familiar with a number of choice
 geographical poems and songs. "The Beautiful House," "The
 Brooklet," "The River," "The Wonderful World," "The
 Frost," etc.

Preparation of teachers.

.—Books helpful.

1. For inspiration: { Burroughs, Thomson,
Thoreau, etc.
2. The masterpieces of scientific literature—Agassiz.
3. Professional books discussing principles and methods: { Jackman.
Howe.
McMurry.
4. Monographs on science topics:
"Crayfish."—Huxley.
"The Great World's Farm."—Gaye.
"The Sun."—Young. etc.
5. Science readers.
6. Text-books.
7. Nature poems.
8. Nature stories.

II.—Observation of a few living animals and plants found in the neighborhood. Types should be chosen and life history should receive special attention.

When the teacher has accurately defined and clearly outlined—

1. The fundamental purposes of nature study.
2. Its various phases,
3. Methods of study,—
She is ready to bring the pupils into unreserved and interested contact with nature.

Field lessons.

Purpose: { Enjoyment.
Knowledge.
Expression.

Ends—how realized.

1. Informal talks on beauty in earth and sky.
2. Poems and stories.
3. Direct attention to some object or class of objects.

In the selection of topics for the first and second grades consider—

1. The season of the year.
2. The life history of a few living plants and animals found in the neighborhood.
3. Type forms.
4. Poems and stories.

FIRST YEAR.

Fall term.

Tree study.

Informal talks.

Gifts of the trees: { Fruits,
Lumber,
Fuel, etc.

Observation lessons on trees near schoolhouse.

Two or three plants studied.

Informal talks on birds.

Chicken studied (type of birds).

Winter term.

Study an evergreen (Christmas tree).
Winter birds. (Bird songs and games.)
Snow. (Children of the cold countries.)
Cat.

Spring term.

Children plant seeds, watch development.
Commit poems.
Spring flowers.
Return of birds.
Continue study of trees.

SECOND YEAR.

Fall term.

Fall flowers.
Seed distribution.
Preparation for winter: { Animals.
 { Plants.
Fruits and vegetables.
Butterfly.

Winter term.

Crystals: { Snow.
 { Salt and sulphur.
 { Quartz.
Cow, studied.
Food, clothing and shelter.

Spring term.

Study of trees and flowers continued.
Frogs—watch development from eggs.
Birds.
Horse.

SCHOOL LIBRARIES AND THEIR USE.

I.—The new school library law.

The Twenty-eighth General Assembly passed "an act to establish libraries for the use of teachers, pupils, and other residents in all school districts." This law is mandatory in school townships and rural independent districts. The treasurers of such townships and districts are required to "withhold annually from the money received from the apportionment—not less than 5 nor more than 15 cents for each person of school age residing in each school corporation, for the purchase of books." These books are to be selected by the "president and secretary of the board, with the assistance of the county superintendent, from lists prepared by the state board of educational examiners. It is further provided that during the periods that the school is in session the library shall be placed in the schoolhouse. In school townships, these books will be collected and re-distributed semi-annually.

II.—The place of the school library in the educational system.

It is not enough that good books should be selected and placed within reach of the pupils. These books should become a part of the life of the schoolroom. They should be used to stimulate and direct the intellectual and spiritual development of the children.

Mere passive handing of books to children by the teacher cheats the children of what has come to be their right and their necessity—the knowledge of the use of books. The teacher is also a loser by this passive process. She cuts herself off from the most certain avenues to the understanding of child nature, and at the same time deprives herself of the use of a vast amount of material with which she could weave together the various parts of the school curriculum and thus unify her school work. No one who aids in the training of citizens can afford to ignore any opportunity of increasing the ability of the citizen to help himself.

III.—The use of the school library as a subject for institute work.

Institute instructors should endeavor to help the teachers to a clear knowledge of what a well managed, though small, library may be to a school.

1. The importance of knowing all the books in the school library intimately.
2. Ways of using books of all sorts to bind the work together.

IV.—The use of books.

1. To amuse.
 2. To instruct.
 3. To develop mind and character.
- .

It is the teacher's province to know her books so well that she can bring out all their latent possibilities. Books that are intended merely to amuse are not so useful in the school as in the home, unless they are properly handled by the teacher.

a. Fiction.

Almost any book of this class may be used as a basis for language work, reading, or spelling. Many of them are invaluable in connection with history and geography, and general world knowledge. It is a poor story that cannot be used to instruct as well as to amuse, and a story that has no ethical value is to be avoided in school libraries.

Illustration:

Toby Tyler, or Ten Weeks with a Circus, by James Otis. The boy reads this story to be entertained. Nothing should be allowed to interfere with his perfect enjoyment of it, but the teacher can make it serve to strengthen his school work without destroying his pleasure. Let the pupil be led to describe:

1. How circus people live.
2. How the animals are cared for.
3. Monkey character as exhibited by Mr. Stubbs.
4. Toby's character. Did it pay him to run away?
5. The good Toby found in other people.

Now let the teacher lead the boy on from one monkey to many chattering in an Amazon forest, and set him to reading travel and natural history. When this is done, the boy has gained something more than mere entertainment from reading Toby Tyler.

Matka and Kotik, by David Starr Jordan, is a story of seal life in Behring sea. It is in the form of fiction, but is the most reliable book concerning the seal that is available for popular use, because it is the statement of a man who is a recognized authority on the subject. The child may read it for the story, but the teacher should seize the opportunity to use it—

1. As a science lesson in the natural history of the seal.
2. As a geography lesson on our Arctic possessions and life in Arctic regions.
3. As a study in elementary international ethics.
4. To study the author and his right to speak as one who knows.
5. To lead the child on to such books as—
Mrs. Peary's "My Arctic Journal."
Schwatka's "Children of the Cold."

In the same way almost every work of fiction that will be selected by the state board of educational examiners as suitable for the schoolroom, can be utilized as supplementary to the ordinary class work. The teacher's object should be to show the pupil how to get at the real significance of what he reads.

b. History, travel, etc.

Books that are designed primarily to convey information may also be used to entertain. To the child truth is, indeed, stranger than fiction.

Illustration:

Along the Florida Reef, by C. F. Holder, is a description of the life of some boys at Fort Jefferson, on one of the Florida keys. They assisted the post surgeon in collecting specimens for the Smithsonian Institution and other museums.

1. Environment as to geographical location, climate, etc.
2. Natural history of a coral reef.
3. Marine life in tropical waters.
4. Methods and purposes of scientific investigation.
5. Great museums, etc.

From this the pupil can go to Ingersoll's *Book of the Ocean*. From life in the ocean to life on it is but a step. There is a world of fact and fancy to lead the pupil through. Commerce, history, poetry, biography cluster around this subject.

c. Poetry.

Poetry is chief among the forms of literature which develop the spiritual nature and bring inspiration. It develops the imagination—the soul's wings. The child will get more pleasure and understanding from it if he first hears it read well. Narrative poetry is the form best adapted for interesting children in poetry.

1. Read the poem to the children.
2. Get them to describe what they see with the mind's eye.
3. Help them to catch the feeling and spirit.

Illustration:

The Wreck of the Hesperus.

This poem is rich in pictures—the wintry sea, the cruel rocks, the skipper, the blue eyed daughter, the rings around the moon, the fog bells, etc.

If the teacher is familiar with the contents of her school library; however small it may be, she can bring up reinforcements in the way of pictures of rock bound coasts, fishing fleets rounding the headland of Cape Ann, or poetry or prose that bring out the cost of man's struggle with the sea. *The Wreck of the Hesperus* should not be left in isolation in the pupil's mind, but should be given its world significance.

As a problem for the institute, let the teachers examine the following books:

Holbrook—*Hiawatha* primer.

Page—*Two Little Confederates*.

Pratt—*De Soto, Marquette and La Salle*.

Then let the institute instructor carry on an informal discussion with the teachers as to the uses of these books at school.

INDEX.

	PAGE.
Introduction	4
Preliminary Thoughts and Considerations.	
The Problems Involved	5
Organization and Management	5
Inspirational Influence	6
The Normal Institute as a Field of Accomplishment.	
Limits Imposed	6
The Program	7
The Regulations	7
Conducting the Institute	7
Province of Instructing	7
The Entertaining Feature	8
The County Superintendent's Province	8
The Application of this Manual to the Individual Institute	8
Professional Work in an Institute	9
THE COURSE OF STUDY.	
Arithmetic.	
First Year	25
Second Year	27
Third Year	29
Topics for Methods	31
Algebra.	
Suggestions about Teaching	61
Beginning Course	61
Advanced Course	63
Topics for Methods	64
Civil Government	52
Didactics.	
First Year	10
Second Year	11
Third and Fourth Years	13
Professional Course	16
Economics.	
Brief Course	67
Advanced Course	68
Grammar.	
Observations on Teaching	31
First Year	32
Second Year	35
Third and Fourth Years	38

INDEX.

83

PAGE.

Geography.	
About Methods of Teaching.....	53
First and Second Years.....	53
Third and Fourth Years.....	55
History.	
First Week.....	47
Second Week.....	49
Third Week.....	50
Fourth Week.....	51
Course in Methods.....	52
School Law for Teachers.....	17
Libraries for Schools.....	79
Music.....	70
Orthography.....	60
Penmanship.....	58
Physics.	
Applied Course.....	64
Academic Course.....	66
Physiology.	
First Year.....	42
Second Year.....	44
Third and Fourth Years.....	45
Primary Teachers' Special Work.....	73
Reading.....	20

